NORTH CAROLINA

Medical Journal

Vol. 16 No. 11
November, 1955

IN THIS ISSUE:

TUBERCULOSIS IN CHILDREN — VERHOEFF and PECK

Tonsillitis, pharyngitis quickly yield to

ILOTYCIN

(Erythromycin, Lilly)

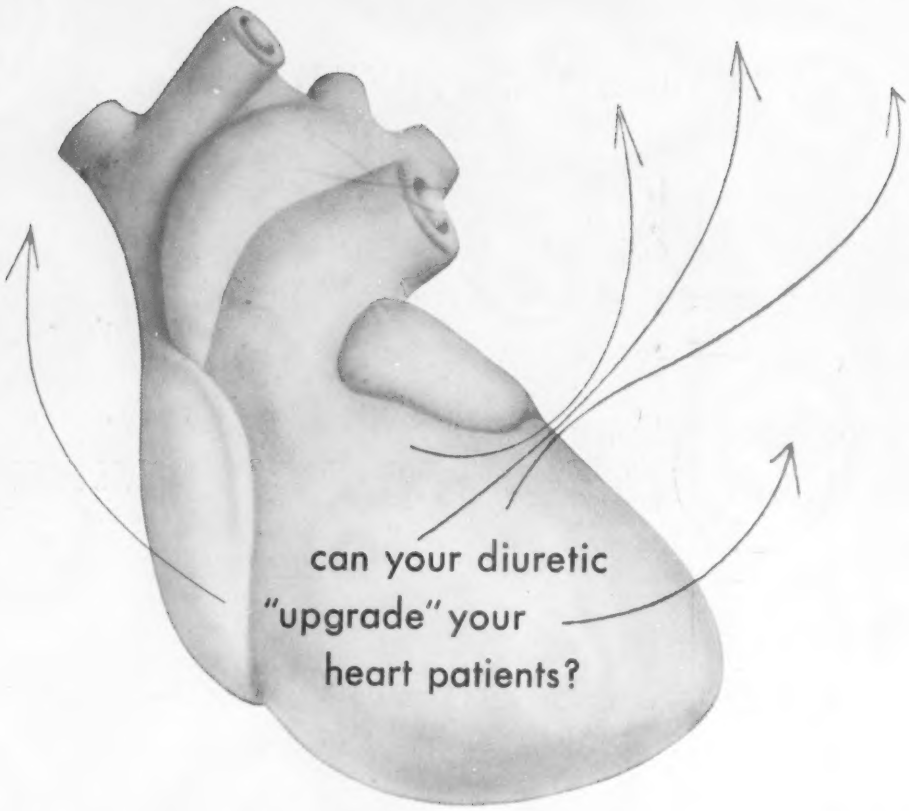
Temperature rapidly returns to normal; swelling and soreness readily subside. Notably *safe* and well tolerated.

dosage: Usually, 250 mg. q. 6 h. Children, 5 mg. per pound of body weight q. 6 h.

Lilly

XE2000

Table of Contents, Page II



know your diuretic

fewer restrictions of activity are the benefit of prolonged use of those diuretics effective over the entire range of cardiac failure. The organomercurials—parenteral and oral—improve the classification and prognosis of your decompensated patients. Diuretics of value only in milder grades of failure, or which must be given intermittently because of refractoriness or side effects, are incapable of "upgrading" the cardiac patient.

TABLET

NEOHYDRIN®

BRAND OF CHLORMERODRIN

(18.3 MG. OF 3-CHLOROMERCURI-2 -METHOXY-PROPYLUREA IN EACH TABLET)

for "...a new picture of the patient in congestive heart failure."*
replaces injections in 80% to 90% of patients

*Leff, W., and Nussbaum, H. E.: J. M. Soc. New Jersey 50:149, 1953.

a standard for initial control of severe failure

MERCUHYDRIN® SODIUM
BRAND OF MERALLURIDE INJECTION

Leadership in diuretic research
Lakeside LABORATORIES, INC., MILWAUKEE 1, WISCONSIN

88555

THE PINEBLUFF SANITARIUM

PINEBLUFF • NORTH CAROLINA

A Sanitarium for Rest Under Medical Supervision, and Treatment of Nervous and Mental Diseases, Alcoholism and Drug Addiction.

The Pinebluff Sanitarium is situated in the sandhills of North Carolina in a 60-acre park of long pines. It is located on U. S. Route 1, six miles south of Pinehurst and Southern Pines. This section is unexcelled for its healthful climate.

Ample facilities are afforded for recreational and occupational therapy, particularly out-of-doors.

Special stress is laid on psychotherapy. An effort is made to help the patient arrive at an understanding of his life problems; and by adjustment to his personality difficulties or modification of personality traits to effect a cure or improvement in the disease. Two resident physicians and a limited number of patients afford individual treatment in each case.

For further information write:

The Pinebluff Sanitarium, Pinebluff, N. C.

Malcolm D. Kemp, M.D. Medical Director

Favored by students at 65 of the 74 U. S. Medical Schools

In most medical schools, students are required to purchase their own otoscope-ophthalmoscope diagnostic sets. In 1954, **Welch Allyn** instruments were purchased by a great majority of students at 65 out of the 74 U. S. medical colleges and at 9 out of the 11 Canadian medical colleges.

Since **Welch Allyn** sets cost somewhat more than competitive brands, it seems obvious that this choice was made on a basis of quality alone. We believe that you who are established in the profession of medicine will be glad to know that our young doctors are starting right, with instruments that will provide accurate diagnosis with minimum effort, plus assurance of long and trouble-free instrument life.

Replace those old worn out sets with NEW WELCH ALLYN, one for the OFFICE and one for the CAR.

WINCHESTER

"CAROLINAS' HOUSE OF SERVICE"

Winchester Surgical Supply Co.
119 East 7th St. Charlotte, N. C.

Winchester-Ritch Surgical Co.
421 West Smith St. Greensboro, N. C.

NORTH CAROLINA MEDICAL JOURNAL

Official Organ of

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

VOLUME 16
NUMBER 11

NOVEMBER, 1955

50 CENTS A COPY
$5.00 A YEAR

CONTENTS

ORIGINAL ARTICLES

Trends in the Management of Tuberculosis in Children—Dirk Verhoeff, M.D., and W. M. Peck, M.D. 511

Results of Insulin Coma Therapy in a State Hospital—Robert N. Harper, M.D. . . . 515

Polyostotic Fibrous Dysplasia with Extraskeletal Features: Report of a Case with Postmortem Observations — John C. Wiggins, Jr., M.D. 520

Factors Producing Ego Disintegration in the Aged—Ewald W. Busse, M.D., Robert H. Barnes, M.D., and Louis D. Cohen, Ph.D. 528

Diphtheria — A Continuing North Carolina Health Problem in 1954—Jacob Koomen, Jr., M.D., and Charles M. Cameron, Jr., M.D., M.P.H. 532

The Management of Congestive Heart Failure Frank P. Ward, M.D. 537

Current Concepts Regarding the Management of Premature Separation of the Placenta—Julian Brantley, M.D. 540

Report of an Eight-Year Cure of Carcinoma of the Breast Complicating Pregnancy — James F. Marshall, M.D. 544

Eye Injuries from Christmas Toys — Dan Currie, M.D. 546

EDITORIALS

United Medical Research Foundation . . . 548
Dr. Reece Berryhill Honored 549
Eye Injuries from Christmas Toys 550
Needed: A Clear Focus on Tuberculosis . . 550
Dr. Frederick R. Taylor 550

PRESIDENT'S MESSAGE

The Physician-Patient Relationship — James P. Rousseau, M.D. 551

COMMITTEES AND ORGANIZATIONS

North Carolina State Board of Health . . . 552

BULLETIN BOARD

Coming Meetings 553
News Notes from the Bowman Gray School of Medicine of Wake Forest College 553
News Notes from the University of North Carolina School of Medicine 553
American Cancer Society, North Carolina Division 554
North Carolina Surgical Association 554
North Carolina Tuberculosis Association . . 554
County Societies 554
Announcements 555

CLASSIFIED ADVERTISEMENTS

558

INDEX TO ADVERTISERS

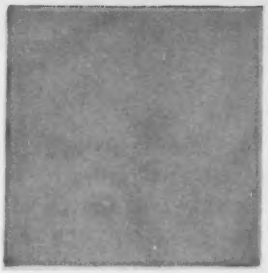
LI

Entered as second-class matter January 2, 1940, at the Post Office at Winston-Salem, North Carolina, under the Act of August 24, 1912. Copyright 1955 by the Medical Society of the State of North Carolina.

The organisms commonly involved in

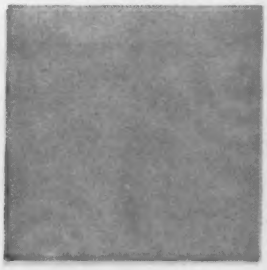
Bronchopneumonia

D. pneumoniae (10,000 X)

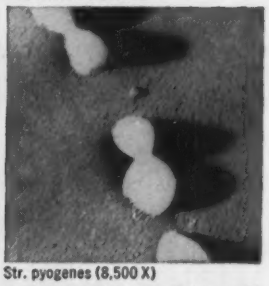


K. pneumoniae (13,000 X)

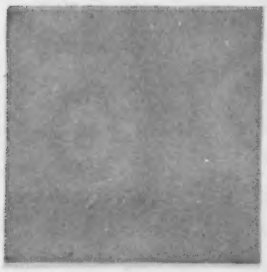
H. pertussis (7,500 X)



Staph. aureus (9,000 X)



Str. pyogenes (8,500 X)



H. influenzae (16,000 X)

Upjohn

ELECTRON MICROGRAPHS

***All* of them are included in the more than 30 organisms susceptible to broad-spectrum**

PANMYCIN*

HYDROCHLORIDE

100 mg. and 250 mg. capsules • 125 mg. and 250 mg./tsp. oral suspension (PANMYCIN Readimixed)
100 mg./cc. drops • 100 mg./2 cc. injection, intramuscular
100 mg., 250 mg., and 500 mg. vials, intravenous

*TRADEMARK. REG. U. S. PAT. OFF.—THE UPJOHN BRAND OF TETRACYCLINE

In a Filter Cigarette... it's the Filter You Depend on

The VICEROY filter tip contains 20,000 tiny filter traps, made through the solubilization of pure natural material. This is twice as many of these filter traps as any other brand.

We believe this simple fact is one of the principal reasons why so many doctors smoke *and* recommend VICEROY—the cigarette you can *really* depend on!

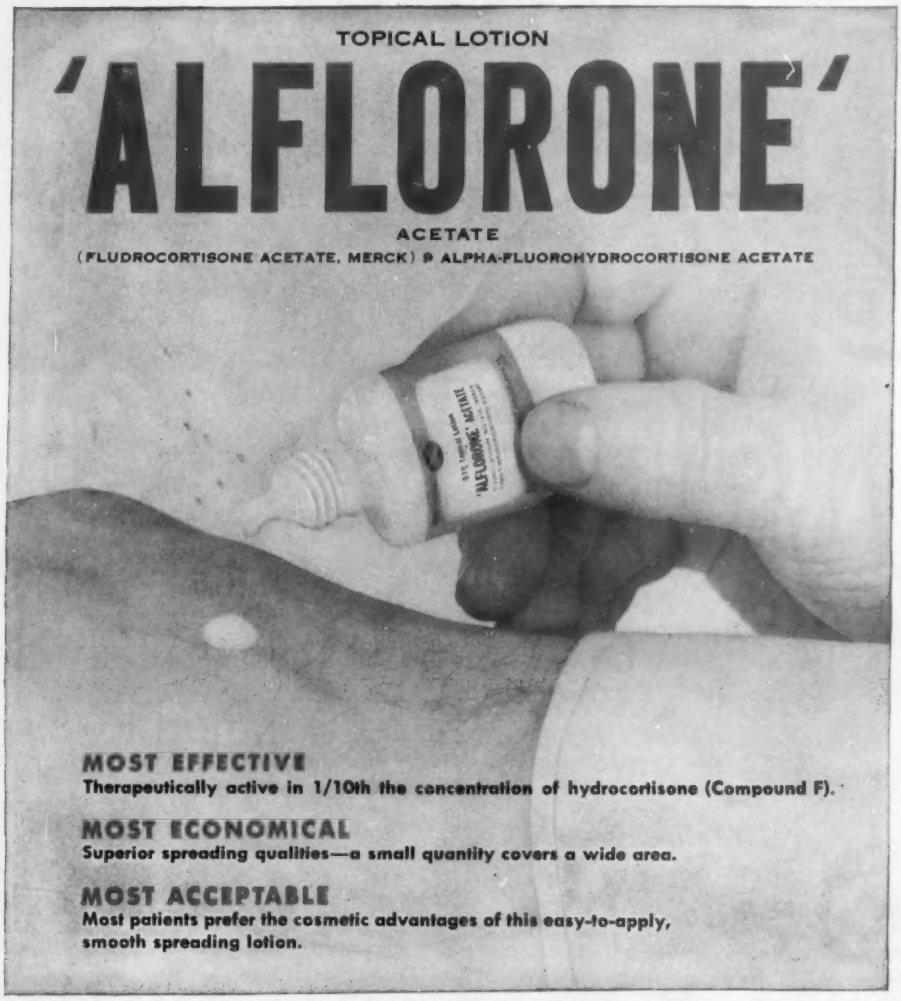
WEIGHT FOR WEIGHT,
THE MOST ACTIVE ANTI-INFLAMMATORY
AGENT YET DEVELOPED
FOR TOPICAL USE

TOPICAL LOTION

'ALFLORONE'

ACETATE

(FLUDROCORTISONE ACETATE, MERCK) 9 ALPHA-FLUOROHYDROCORTISONE ACETATE



MOST EFFECTIVE
Therapeutically active in 1/10th the concentration of hydrocortisone (Compound F).

MOST ECONOMICAL
Superior spreading qualities—a small quantity covers a wide area.

MOST ACCEPTABLE
Most patients prefer the cosmetic advantages of this easy-to-apply, smooth spreading lotion.

Supplied: Topical Lotion Alflorone Acetate: 0.1% and 0.25%, in 15-cc. plastic squeeze bottles. Topical Ointment Alflorone Acetate: 0.1% and 0.25%, 5-Gm., 15 Gm., and 30-Gm. tubes.

SHARP & DOHME
Philadelphia 1, Pa.
DIVISION OF MERCK & CO., INC.

now available
for clinical use . .

METICORT

"possesses an augmented therapeutic ratio"[1]
in cortical hormone therapy

Schering

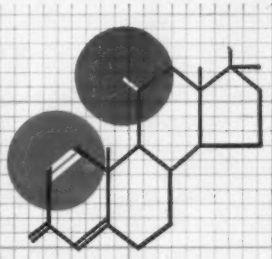
METICORTELONE possesses antirheumatic and anti-inflammatory effectiveness and hormonal properties similar to those of METICORTEN,[1-5] the first of the new Schering corticosteroids. Both are three to five times as potent, milligram for milligram, as oral cortisone or hydrocortisone. METICORTELONE and METICORTEN therapy is seldom associated with significant water or electrolyte disturbances.

METICORTELONE is an analogue of hydrocortisone, as METICORTEN is of cortisone. The availability of these new steroids, both discovered and introduced by Schering, provides the physician with two therapeutic agents of approximately equal effectiveness.

METICORTELONE is now available as 5 mg. buff-colored tablets, scored, bottles of 30 and 100. In the treatment of rheumatoid arthritis, dosage begins with an average of 20 to 30 mg. (4 to 6 tablets) a day. This is gradually reduced by 2.5 to 5 mg. until daily maintenance dosage, which may be between 5 to 20 mg., is reached. The total 24-hour dose should be divided into four parts and administered *after meals and at bedtime*. Patients may be transferred directly from hydrocortisone or cortisone to METICORTELONE without difficulty.

elone

PREDNISOLONE, SCHERING (METACORTANDRALONE)



Bibliography: (1) Bunim, J. J.; Pechet, M. M., and Bollet, A. J.: J.A.M.A. *157*:311, 1955. (2) Waine, H.: Bull. Rheumat. Dis. *5*:81, 1955. (3) Tolksdorf, S., and Perlman, P.: Fed. Proc. *14*:377, 1955. (4) Herzog, H. L., and others: Science *121*:176, 1955. (5) King, J. H., and Weimer, J. R.: Experimental and clinical studies on METICORTEN (prednisone) and METICORTELONE (prednisolone) in ophthalmology, A.M.A. Arch. Ophth., to be published. (6) Boland, E. W.: California Med. *82*:65, 1955; abs. Curr. M. Digest *22*:53, 1955. (7) Dordick, J. R., and Gluck, E. J.: J.A.M.A. *158*:166, 1955. (8) Margolis, H. M., and others: J.A.M.A. *158*:454, 1955. (9) Barach, A. L.; Bickerman, H. A., and Beck, G. J.: Dis. Chest *27*:515, 1955. (10) Arbesman, C. E., and Ehrenreich, R. J.: J. Allergy *26*:189, 1955. (11) Skaggs, J. T.; Bernstein, J., and Cooke, R. A.: J. Allergy *26*:201, 1955. (12) Schwartz, E.: J. Allergy, *26*:206, 1955. (13) Robinson, H. M., Jr.: J.A.M.A. *158*:473, 1955. (14) Dordick, J. R., and Gluck, E.: Preliminary Clinical trials with prednisone (METICORTEN) in systemic lupus erythematosus, A.M.A. Arch. Dermat. & Syph., in press. (15) Nelson, C. T.: J. Invest. Dermat. *24*:377, 1955.

first of the new Schering corticosteroids

METICORTEN

PREDNISONE, SCHERING (METACORTANDRACIN)

- replacing the older corticosteroids in rheumatoid arthritis[1,2,6-8] intractable asthma[9-12] eye disorders[5] certain skin disorders such as disseminated lupus erythematosus,[13,14] acute pemphigus,[13,15] atopic dermatitis[15] and other allergic dermatoses
- more active than hydrocortisone or cortisone, milligram for milligram
- relatively free of significant water or electrolyte disturbances [5]

METICORTEN is available as 5 mg. scored, white tablets in bottles of 30 and 100.
METICORTELONE,* brand of prednisolone (metacortandralone).
METICORTEN,* brand of prednisone (metacortandracin).

Medical Society of the State of North Carolina

OFFICERS 1955-1956

President—JAMES P. ROUSSEAU, M.D., 1014 West Fifth Street, Winston-Salem

President-Elect—DONALD B. KOONCE, M.D., 408 N. 11th Street, Wilmington

First Vice-President—EDWARD W. SCHOENHEIT, M.D., 46 Haywood Street, Asheville

Second Vice-President—MILTON S. CLARK, M.D., 401 Bank of Wayne Bldg., Goldsboro

Secretary-Treasurer—MILLARD D. HILL, M.D., 15 W. Hargett Street, Raleigh

Executive Secretary—MR. JAMES T. BARNES, 203 Capital Club Bldg., Raleigh

The President, Secretary-Treasurer, and Executive Secretary are members ex-officio of all committees

COUNCILORS 1955-1958

First District—T. P. BRINN, M.D., 25 Market Street, Hertford
VICE COUNCILOR—Q. E. COOKE, M.D., Murfreesboro

Second District—FREDERICK P. BROOKS, M.D., 525 Evans St., Greenville
VICE COUNCILOR—F. M. SIMMONS PATTERSON, M.D., P.O. Box 814, 408 Broad St., New Bern

Third District—DEWEY H. BRIDGER, M.D., Bladenboro
VICE COUNCILOR—WILLIAM A. GREENE, M.D., 104 E. Commerce St., Whiteville

Fourth District—HENDERSON IRWIN, M.D., Box 26, Eureka
VICE COUNCILOR—ERNEST L. STRICKLAND, M.D., 103 North Pine Street, Wilson

Fifth District—RALPH B. GARRISON, M.D., 220 North Main Street, Hamlet
VICE COUNCILOR—LOUTEN R. HEDGPETH, M.D., Box 1081, Lumberton

Sixth District—GEO. W. PASCHAL, JR., M.D., 311 Land Bldg., Raleigh
VICE COUNCILOR—RIVES W. TAYLOR, M.D., Box 1008, Oxford

Seventh District—LESLIE M. MORRIS, M.D., Medical Bldg., Gastonia
VICE COUNCILOR—JAMES F. REINHARDT, M.D., Crowell Hospital, Lincolnton

Eighth District—MERLE D. BONNER, M.D., Guilford Sanatorium, Jamestown
VICE COUNCILOR—HARRY L. JOHNSON, M.D., Box 530, Elkin

Ninth District—JOHN C. REECE, M.D., Grace Hospital, Morganton
VICE COUNCILOR—FRANK W. JONES, M.D., Catawba Hospital, Newton

Tenth District—WILLIAM A. SAMS, M.D., Box BB, Marshall
VICE COUNCILOR—BURNICE E. MORGAN, M.D., 304 Medical Bldg., Asheville

Speaker of House of Delegates—G. WESTBROOK MURPHY, M.D., 611 Flatiron Building, Asheville

Vice Speaker of House of Delegates—LENOX D. BAKER, M.D., Duke Hospital, Durham

The above-named officers, councilors, and speakers constitute the Executive Council of the Society which has interim authority over the affairs of the Society between annual meetings of the House of Delegates.

SECTION CHAIRMEN — 1955-1956

General Practice of Medicine and Surgery—WILLIAM P. KAVANAGH, M.D., Cooleemee

Practice of Medicine—KENNETH D. WEEKS, M.D., 1605 W. Thomas St., Rocky Mount

Ophthalmology and Otolaryngology—JOHN S. GORDON, M.D., 412 N. Church St., Charlotte

Surgery—JAMES F. MARSHALL, M.D., 310 W. 4th Street, Winston-Salem

Pediatrics—PAUL F. MANESS, M.D., 321 W. Front St., Burlington

Gynecology and Obstetrics—JAMES F. DONNELLY, M.D., State Board of Health, Raleigh

Public Health and Education—A. HUGHES BRYAN, M.D., School of Public Health, Chapel Hill

Neurology and Psychiatry—THOMAS W. FARMER, M.D., N. C. Memorial Hospital, Chapel Hill

Radiology—THOMAS G. THURSTON, M.D., 512 Mocksville Ave., Salisbury

Pathology—JOHN C. REECE, M.D., Grace Hospital, Morganton

Anesthesia—LEONARD NANZETTA, M.D., City Memorial Hospital, Winston-Salem

From virus to vermicularis

Terramycin®* has proved effective against an amazing variety of pathogens—ranging from sub-microscopic viruses to large helminthic parasites; findings supported by scientific reports by thousands of physicians on millions of cases. ■ Supplied in convenient and palatable oral dosage forms as well as rapidly effective parenteral, topical and ophthalmic preparations.

*BRAND OF OXYTETRACYCLINE

PFIZER LABORATORIES, Division, Chas. Pfizer & Co., Inc., Brooklyn 6, N. Y. Pfizer

little

How to win friends ...

The Best Tasting Aspirin you can prescribe.

The Flavor Remains Stable down to the last tablet.

15¢ Bottle of 24 tablets (2½ grs. each).

We will be pleased to send samples on request.

THE BAYER COMPANY DIVISION

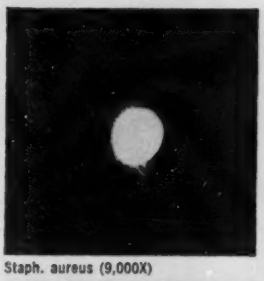
of Sterling Drug Inc.

1450 Broadway, New York 18, N. Y.

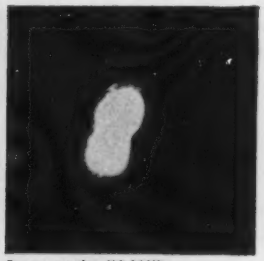
The organisms commonly involved in

Acute Pharyngitis

Strep. pyogenes (8,500X)



Staph. aureus (9,000X)

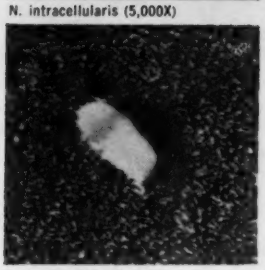


D. pneumoniae (10,000X)

N. intracellularis (5,000X)

H. influenzae (16,000X)

C. diphtheriae (6,000X)



K. pneumoniae (13,000X)

Upjohn

ELECTRON MICROGRAPHS

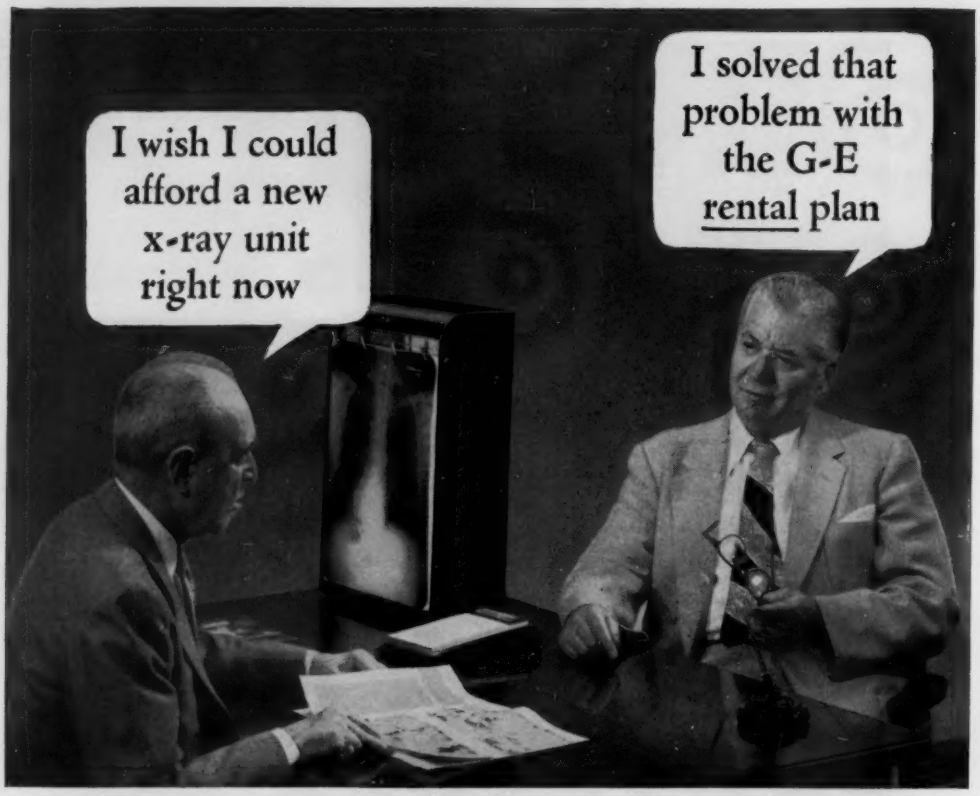
***All* of them are included in the more than 30 organisms susceptible to broad-spectrum**

PANMYCIN*

HYDROCHLORIDE

100 mg. and 250 mg. capsules • 125 mg. and 250 mg./tsp. oral suspension (PANMYCIN Readimixed)
100 mg./cc. drops • 100 mg./2 cc. injectable, intramuscular
100, 250, and 500 mg./injection, intravenous

*TRADEMARK, REG. U. S. PAT. OFF. — THE UPJOHN BRAND OF TETRACYCLINE



G-E MAXISERVICE®

gives you the x-ray apparatus you need with no initial capital investment

THIS is the way to bring your x-ray facilities up to date without knocking your budget out of kilter.

The G-E Maxiservice Rental Plan puts modern x-ray apparatus to work for you . . . lets you serve your patients more efficiently with equipment designed for the latest technics. Through periodic replacement feature, you can keep your installation always up to date . . . without "trade-ins."

One monthly rental charge includes repair parts, tubes, maintenance and local property taxes. It can be budgeted as operating expense against income from your installation. Your capital is not tied up in apparatus.

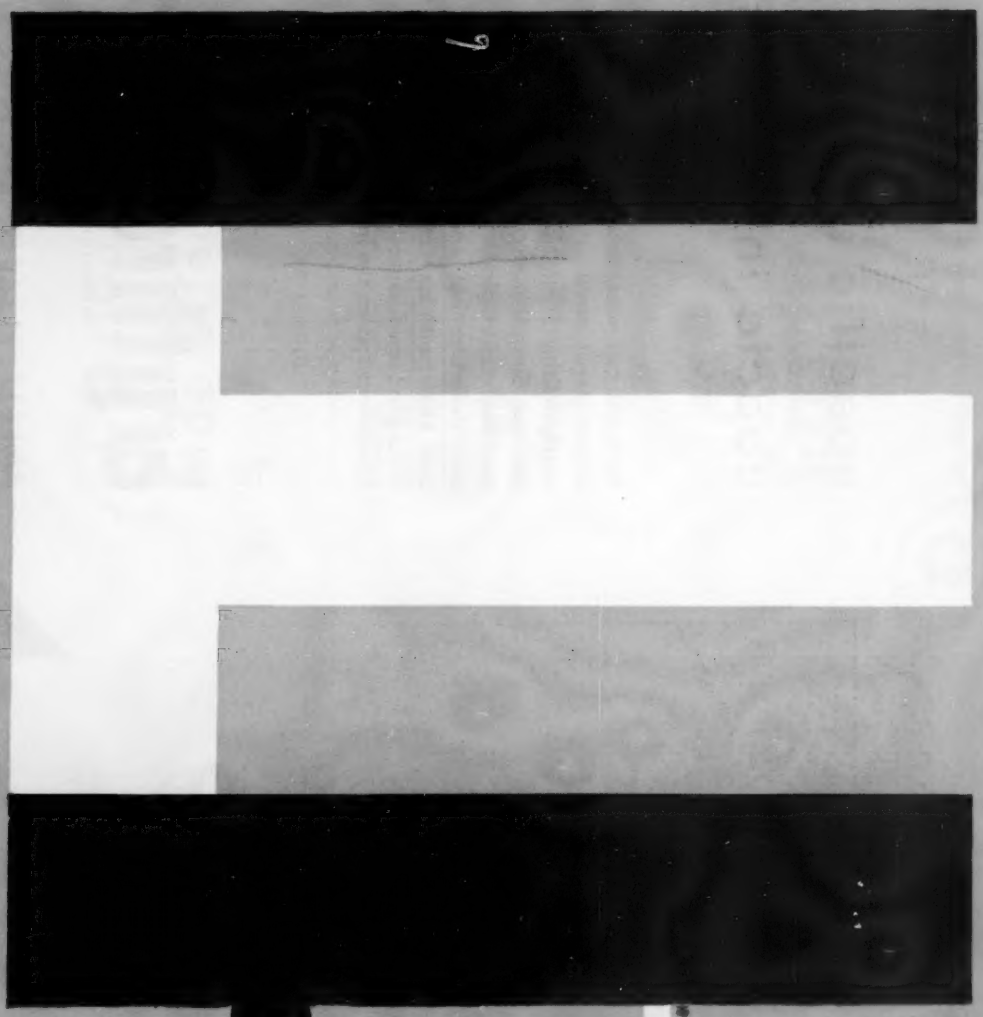
Ask you G-E x-ray representative about the Maxiservice Rental Plan.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Direct Factory Branch:
CHARLOTTE — 1140 Elizabeth Ave.

Resident Representatives:
WINSTON-SALEM—N. E. Bolick, 1234 Miller St.
WILSON—A. L. Harvey, 1501 Branch St.



for
equanimity[1,2]

Equanil®

Meprobamate

(2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate)

Usual dosage: 1 tablet, t.i.d.

Supplied: Tablets, 400 mg., bottles of 48.

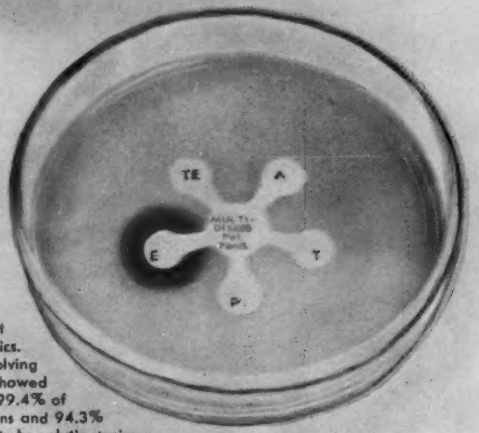
1. Selling, L.S.: J.A.M.A. 157:1594 (April 30) 1955.
2. Borrus, J.C.: J.A.M.A. 157:1596 (April 30) 1955.

Wyeth
Philadelphia, Pa.

new anti-anxiety factor with muscle-relaxing properties

relieves tension

*Trademark



DESTROYS ENTEROCOCCI

This blood agar plate shows a strain of *beta* hemolytic enterococcus. Note extreme sensitivity of this organism to ERYTHROCIN—yet it easily resists the other antibiotics. Additional data: A study[1] involving 202 enterococcic strains showed sensitivity to erythromycin in 99.4% of *alpha* hemolytic strains and 94.3% of *beta* hemolytic strains.

specific against coccic infections

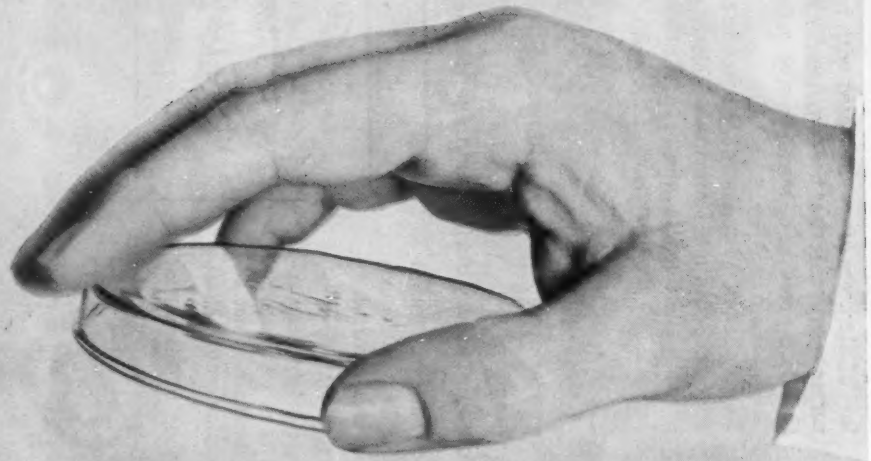
Now, you can prescribe *specific therapy* against staph-, strep- or pneumococci by simply writing *Filmtab* ERYTHROCIN Stearate. Since this coccic group causes most bacterial respiratory infections (and since these organisms are the very ones most sensitive to ERYTHROCIN) doesn't it make good sense to prescribe *Filmtab* ERYTHROCIN when the infection is coccic?

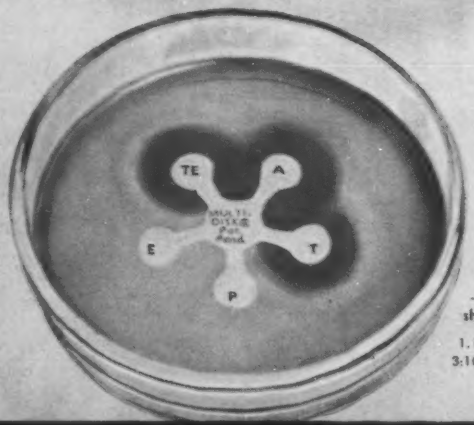
filmtab

Erythrocin®

Erythromycin Stearate, Abbott)

STEARATE





SPARES
INTESTINAL FLORA

This sensitivity test shows ERYTHROCIN and the same antibiotics against a typical intestinal strain of *E. coli*. Note that ERYTHROCIN and penicillin do not affect this gram-negative organism —although the other antibiotics show marked inhibitory action.

1. Eisenberg, et al., Antib. & Chemo., 3:1026-1028, Oct., 1953.

with little risk of serious side effects

Since ERYTHROCIN is inactive against gram-negative organisms, it is less likely to alter intestinal flora—with an accompanying low incidence of side effects. Also, your patients seldom get the allergic reactions sometimes seen with penicillin. Or loss of accessory vitamins during ERYTHROCIN therapy. *Filmtab* ERYTHROCIN Stearate (100 and 250 mg.) is supplied in bottles of 25 and 100 at pharmacies everywhere. Abbott

filmtab®

Erythrocin®

(Erythromycin Stearate, Abbott)
STEARATE

® Filmtab—Film coated tablets; patent applied for.

509183

the drug of choice

. . . as a tranquilizing (ataractic) agent*
in anxiety and tension states
. . . in hypertension

RAUDIXIN

Squibb Whole Root Rauwolfia

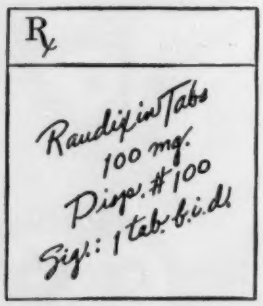
As a tranquilizing agent in office practice, Raudixin produces a calming effect, usually free of lethargy and hangover and without the loss of alertness often associated with barbiturate sedation. It does not significantly lower the blood pressure of normotensive patients.

In hypertension, Raudixin produces a gradual, sustained lowering of blood pressure. In addition, its mild bradycardic effect helps reduce the work load of the heart.

- **Less likely to produce depression**
- **Less likely to produce Parkinson-like symptoms**
- **Causes no liver dysfunction**
- **No serial blood counts necessary during maintenance therapy**

- Raudixin is not habit-forming; the hazard of overdosage is virtually absent. Tolerance and cumulation have not been reported.
- Raudixin supplies the *total* activity of the whole rauwolfia root, accurately standardized by a rigorous series of test methods. The total activity of Raudixin is not accounted for by its reserpine content alone.

Supply: 50 mg. and 100 mg. tablets, bottles of 100 and 1000.



*Ataractic, from ataraxia: calmness untroubled by mental or emotional excitation. (Use of term suggested by Dr. Howard Fabing at a recent meeting of the American Psychiatric Association.)

SQUIBB

"RAUDIXIN"® IS A SQUIBB TRADEMARK

1950 Cortone® | 1952 Hydrocortone®

1954 'Alflorone' | 1955 'Hydeltra'

DELTRA® tablets

(Prednisone, Merck) 5 mg. - 2.5 mg. - 1 mg. (scored)

the delta-1analogue of cortisone

Indications:

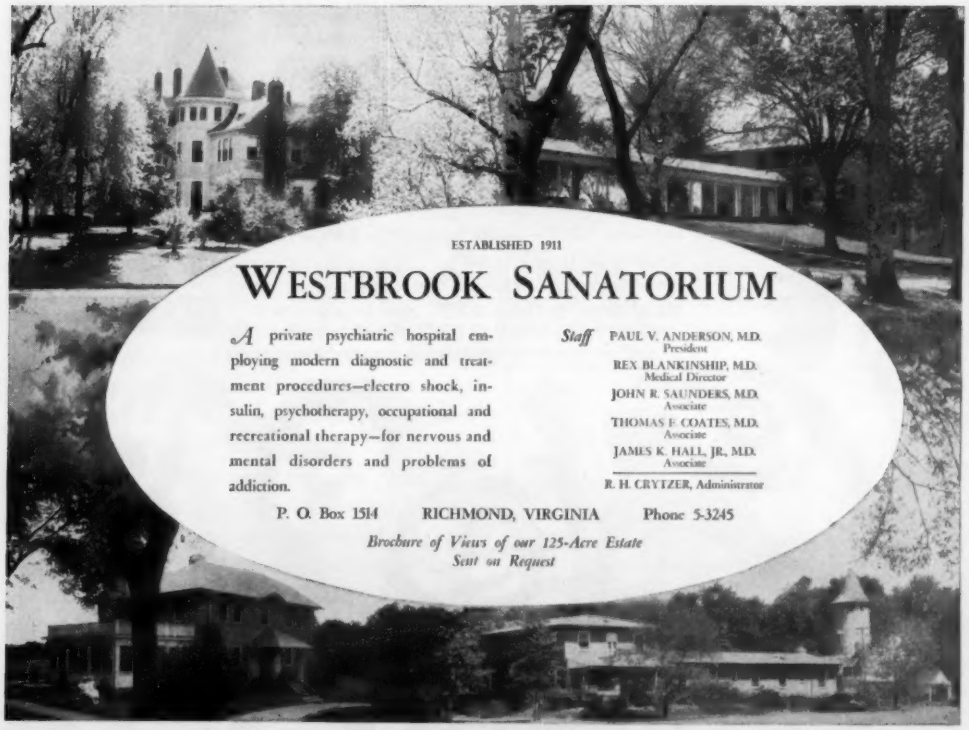
Rheumatoid arthritis

Bronchial asthma

Inflammatory skin conditions

SHARP & DOHME

Philadelphia 1, Pa.
DIVISION OF MERCK & CO., INC.


ESTABLISHED 1911
WESTBROOK SANATORIUM
A private psychiatric hospital employing modern diagnostic and treatment procedures—electro shock, insulin, psychotherapy, occupational and recreational therapy—for nervous and mental disorders and problems of addiction.
Staff
PAUL V. ANDERSON, M.D. President
REX BLANKINSHIP, M.D. Medical Director
JOHN R. SAUNDERS, M.D. Associate
THOMAS F. COATES, M.D. Associate
JAMES K. HALL, JR., M.D. Associate
R. H. CRYTZER, Administrator
P. O. Box 1514 RICHMOND, VIRGINIA Phone 5-3245
Brochure of Views of our 125-Acre Estate Sent on Request

For Nasal Congestion in THE COMMON COLD

Physiologically acceptable Neo-Synephrine hydrochloride solution promptly constricts the engorged nasal capillaries which are responsible for nasal congestion in the common cold. When the nasal mucosa is reduced to its normal state, the nasal passages resume their proper patency, drainage is possible, and the patient can again breathe freely.

By its shrinking action on the nasal mucosa, Neo-Synephrine helps to keep the sinuses aerated and the openings to the eustachian tubes clear.

Neo-Synephrine within minutes produces decongestion that lasts for hours.

NEO-SYNEPHRINE®

Hydrochloride

DOSAGE FORMS Solutions: 0.25% — 0.25% (aromatic) — 0.5% — 1% — Emulsion 0.25% — Jelly 0.5%
Nasal Spray 0.5% (plastic, unbreakable squeeze bottle)
Nasal Spray Pediatric 0.25% ***(new introduction)***
Contains Zephiran® Cl 0.02% (1:5000), antibacterial wetting agent and preservative for greater efficiency.

Winthrop Stearns INC. NEW YORK 18, N.Y. WINDSOR ONT.

Neo-Synephrine (brand of phenylephrine), trademark reg. U.S. Pat. Off.

KNOX Protein Previews

New Study Shows Gelatine
Restores Brittle Fingernails to Normal

Directions for making the Knox Gelatine drink in every package

Brittle, fragile or laminating fingernails are the bane of many a woman's existence. Yet this highly prevalent and distressing condition often has gone uncontrolled for lack of effective therapy. Now, you can promise these patients substantial relief in a large percentage of cases.

In a recent study[1] that confirmed previous work[2] Knox Gelatine was used to treat 36 women with fragile, brittle, laminating fingernails. The response was most gratifying. Except for three patients who discontinued the therapy, three diabetics, and two women who had congenital deformities, the splitting ceased and all other patients were able to manicure their nails to a full point by the time the study ended.

Optimal dosage proved to be one envelope (7 grams) of Knox Gelatine administered daily for three months. Improvement, however, was noted after the first month. If you would like more complete details of this work, just use the coupon.

1. Rosenberg, S. and Oster, K. A., "Gelatine in the Treatment of Brittle Nails," *Conn. State Med. J.* 19:171-179, March 1955.
2. Tyson, T. L., *J. Invest. Dermat.* 14:323, May 1950.

Chas. B. Knox Gelatine Company, Inc.
Professional Service Dept. SJ-11
Johnstown, N. Y.

Please send me a reprint of the article by Rosenberg and Oster with illustrated color brochure.

YOUR NAME AND ADDRESS

in arthritis
and
allied disorders...

nonhormonal anti-arthritic

BUTAZOLIDIN®

(brand of phenylbutazone)

relieves pain • improves function • resolves inflammation

Employing the serum protein-polysaccharide ratio (PR) as an objective criterion of rheumatoid activity, it has again been shown that BUTAZOLIDIN "...produces more than a simple analgesic effect in rheumatoid arthritis."[1]

Clinically, the potency of BUTAZOLIDIN is reflected in the finding that 57.6 per cent of patients with rheumatoid arthritis respond to the extent of "remission" or "major improvement."[2]

Long-term study has now shown that the failure rate with BUTAZOLIDIN in rheumatoid arthritis, and particularly in rheumatoid spondylitis, is significantly lower than with hormonal therapy.[3]

(1) Payne, R. W.; Shetlar, M. R.; Farr, C. H.; Hellbaum, A. A., and Ishmael, W. K.: J. Lab. & Clin. Med. 45:331, 1955. (2) Bunim, J. J.; Williams, R. R., and Black, R. L.: J. Chron. Dis. 1:168, 1955. (3) Holbrook, W. P.: M. Clin. North America 39:405, 1955.

BUTAZOLIDIN® (brand of phenylbutazone). Red coated tablets of 100 mg.

BUTAZOLIDIN being a potent therapeutic agent, physicians unfamiliar with its use are urged to send for literature before instituting therapy.

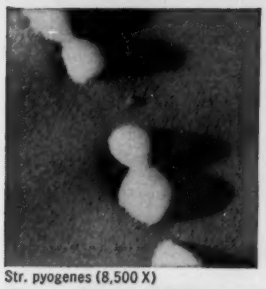
GEIGY PHARMACEUTICALS Division of Geigy Chemical Corporation
220 Church Street, New York 13, N. Y.
In Canada: Geigy Pharmaceuticals, Montreal

Geigy

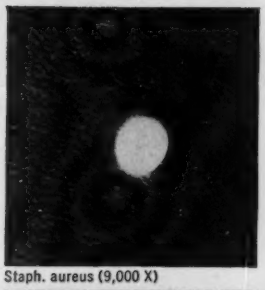
81155

The organisms commonly involved in

Tracheobronchitis

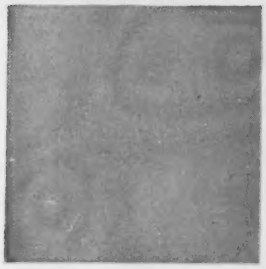


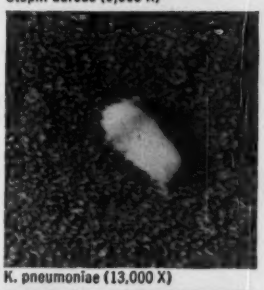
Str. pyogenes (8,500 X)



Staph. aureus (9,000 X)

D. pneumoniae (10,000 X)





K. pneumoniae (13,000 X)

H. influenzae (16,000 X)

H. pertussis (7,500 X)

Upjohn

ELECTRON MICROGRAPHS

***All* of them are included in the more than 30 organisms susceptible to broad-spectrum**

PANMYCIN*

HYDROCHLORIDE

100 mg. and 250-mg. capsules • 125 mg. and 250 mg./tsp. oral suspension (PANMYCIN Readimixed) 100 mg./cc. drops • 100 mg./2 cc. injection, intramuscular 100 mg., 250 mg., and 500 mg. vials, intravenous

*TRADEMARK, REG. U.S. PAT. OFF.—THE UPJOHN BRAND OF TETRACYCLINE

when hormones

are preferred therapy...

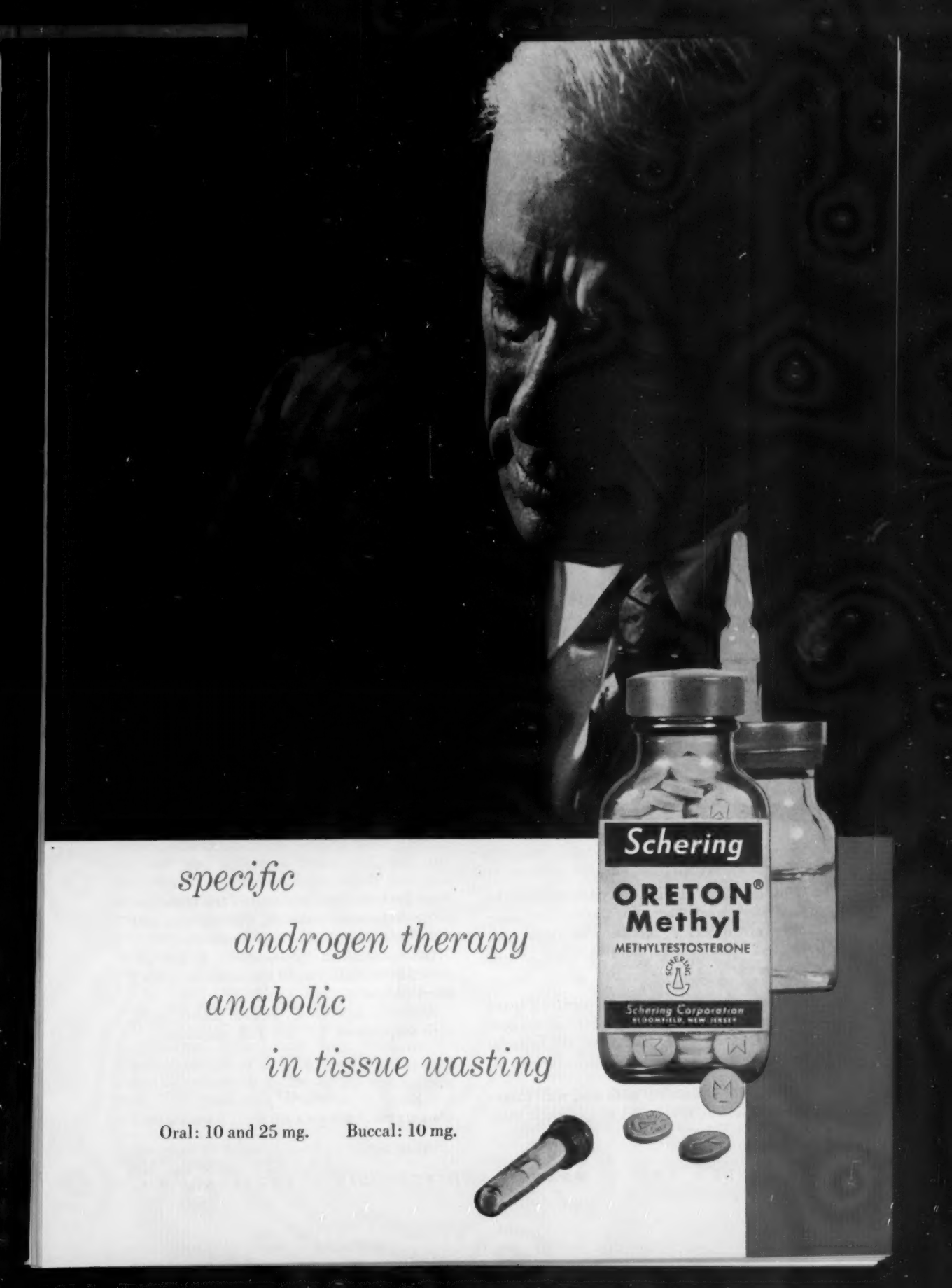
SCHERING HORMONES

assure superior quality

Schering's high standards and quality control assure products of unchanging potency and purity for uniform action and clinical efficacy.

minimal cost

Manufacturing know-how and continuing research by Schering provide preparations of highest quality at minimum cost.



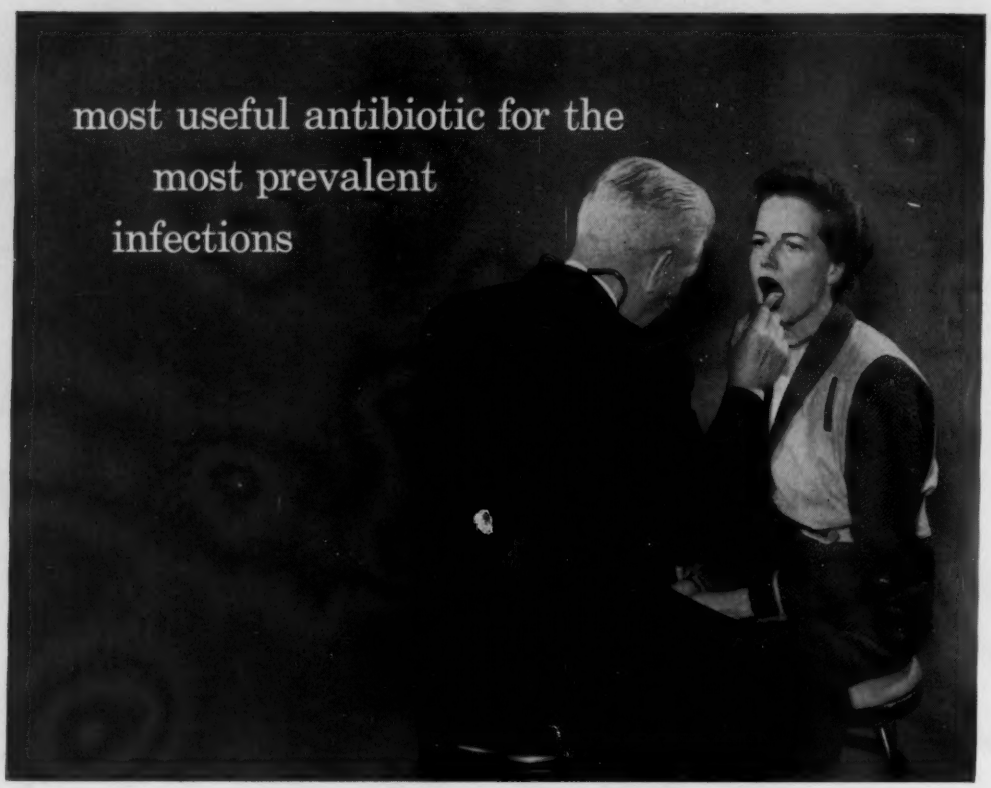
specific

androgen therapy

anabolic

in tissue wasting

Oral: 10 and 25 mg. **Buccal: 10 mg.**



832179

'Ilotycin'

(ERYTHROMYCIN, LILLY)

Over 96% of all acute bacterial respiratory infections respond readily

'Ilotycin' kills susceptible pathogens of the respiratory tract. Therefore, the response is decisive and quick. Bacterial complications such as otitis media, chronic tonsillitis, and pyelitis are less likely to occur.

Most pathogens of the respiratory tract are rapidly destroyed. Yet, because the coliform bacilli are highly insensitive, the bacterial balance of the intestine is seldom disturbed.

'Ilotycin' is notably safe and well tolerated. Urticaria, hives, and anaphylactic reactions have not been reported in the literature.

Staphylococcus enteritis, avitaminosis, and moniliasis have not been encountered.

Gastro-intestinal hypermotility is not observed in bed patients and is seen in only a small percentage of ambulant patients.

Available as specially coated tablets, pediatric suspensions, I.V. and I.M. ampoules.

Lilly

QUALITY / RESEARCH / INTEGRITY

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U.S.A.

NORTH CAROLINA MEDICAL JOURNAL

OWNED AND PUBLISHED BY

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

VOLUME 16 NOVEMBER, 1955 NUMBER 11

TRENDS IN THE MANAGEMENT OF TUBERCULOSIS IN CHILDREN

DIRK VERHOEFF, M.D.

and

W. M. PECK, M.D.

McCAIN

Treatment of tuberculosis in children has not stimulated much interest in recent times. Perhaps this pattern of indifference was set in the pre-drug years when it was difficult to show that any treatment, in or out of a sanatorium, could materially alter the natural course of the disease. This lack of concern has included not only clinicians but public health officials and investigators as well, so that at this moment one is unable to state, or even accurately estimate, the percentage of children in North Carolina who react to tuberculin; and this is an index of considerable importance, not only in estimating the pediatric problem, but in measuring the success of the entire tuberculosis control program.

Recently, however, interest in childhood tuberculosis has been renewed. Though this change has come somewhat belatedly and perhaps reluctantly, it reflects the optimism of new and effective treatment, and improvement in epidemiologic conditions and public health standards which, at long last, provide an acceptable and challenging basis for procedure. Those caring for children now play a much more important role in the over-all problem of controlling tuberculosis, and in the light of this assumption we make the following challenging prediction: The manner in which we treat tuberculosis in children today may very well decide whether or not tuberculosis will continue to exist as a menacing disease 20 years from now. This prediction, of course, is based not on established fact but on various trends and current developments which make it plausible.

Prevention of Endogenous Re-infection

Under present conditions in North Carolina, with an active case-finding program and actual enforcement of the Health Law, the chance of repeated contact with positive sputum is rather slight. Exogenous infection, accordingly, is likely to occur only once, and then at a time of primary infection. In such a favorable situation, re-infection, or the adult type of disease, is likely to develop only on an endogenous basis—that is, relapse of the primary lesion itself. Public Health officials and those treating the adult type of disease have done their job so well that repeated exogenous re-infection has become improbable; now it is up to those who treat primary tuberculosis to develop methods which will make endogenous re-infection just as unlikely. If this premise is valid—and there is rationale to support it—then our approach to the problem should be:

1. To obtain maximum stability and security for each active primary lesion by optimum drug therapy. This objective applies to both lesions that can be seen by roentgenograms and to those which can be detected only by demonstration of recent tuberculin conversion.
2. To follow each child with a positive tuberculin reaction, just as a carrier of any infectious disease, for many years, with special emphasis on periods of stress such as adolescence.

Obviously, such an approach was im-

Read before the Section on Pediatrics, Medical Society of North Carolina, Pinehurst, May 3, 1955.

From North Carolina Sanatorium, McCain.

practical so long as the great majority of individuals were infected with tubercle bacilli, but with the diminishing incidence of the disease the proportionate importance of each tuberculin reactor as a carrier of viable tubercle bacilli increases vastly in the overall control program. The establishment of actual tuberculin case registries now seems feasible and appears to be the next logical development in our tuberculosis control efforts.

Pathogenesis

In order to develop this thesis, let us recall several essential features of pathogenesis. Tubercle bacilli inhaled by the child at the time of first infection usually lodge in the alveoli and commence a short phase of wild, free multiplication which is unhampered by host resistance. During this period some of the baccilli extend by way of the lymphatic glands to hilar and mediastinal lymph nodes and, escaping these filters, to more distant parts. During this phase of development there are no symptoms, no signs, no radiographic changes, and the tuberculin test remains negative. From about the third to eighth week after infection allergy to tuberculin-proteins develops. Then the host responds with inflammatory changes which are visible on roentgen examination in the region of the original implantation and in the draining lymph nodes; caseation necrosis occurs in varying degree, depending largely on the duration and intensity of the inflammatory process, and we see the development of a lesion which on pathologic and roentgenologic examination can be recognized as a primary tuberculous infection.

As you are aware, this lesion shows a rather pronounced tendency to subside—not to heal, since the causative organism is not destroyed, but to regress to the point of a calcified Ghon complex. Recent exhaustive pathologic studies of these calcified lesions have disturbed us by re-emphasizing their insecurity. Typically they consist of irregular mixtures of calcified spicules, caseation necrosis, and fibrosis. Sometimes soft caseous material is sealed off from a bronchus only by an inspissated plug of necrotic debris. These mechanical barriers to extension of the disease, on which we used to put so much dependence, appear very fragile and haphazard, and oftentimes it seems probable that calcification and fibrosis actually serve the bacilli by protecting them from the host. The demonstration of calcification, then, should not be accepted as evidence of secure healing, but only as an indication that a severe, destructive process has taken place. It also marks the site of the living tubercle bacilli which the individual must henceforth carry with him as a potential threat to him and his community.

The Hazard of Primary Infection

There is an established tradition for regarding the natural course of primary tuberculous infection as benign. How well earned is this reputation? Available data partly answers this question. Dr. Edith Lincoln[1], in reviewing her experience at Bellevue Hospital, found that in the period before drug therapy 980 children with active primary tuberculosis were admitted to her service. All had lesions which could be demonstrated roentgenographically. Twenty-one and five-tenths per cent of these children died. This percentage may be somewhat high and is possibly weighted by selection in favor of more serious disease, but it is comparable with other reports of hospitalized tuberculous children.

Hyge[2] probably comes closer to defining the actual hazard which a child acquires on first exposure to tuberculosis. He describes a situation in which 94 school girls, whose ages ranged from 12 to 18, were simultaneously exposed to tuberculosis. Of these 94 girls, 70 gave positive reactions; and 41 of these showed radiologic evidence of a primary lesion; 37 presented bacteriologic evidence as shown by positive gastric lavage, and pleurisy with effusion developed in 10. In a three-year follow-up period, chronic pulmonary tuberculosis developed in 6 of these girls. In this study, therefore, more than 8 per cent of adolescent girls became re-infected with tuberculosis, presumably on an endogenous basis and as an aftermath of primary infection.

Johnston, Howard and Douglas[3], in Detroit, approached the question somewhat differently. They were able to follow 932 children who were removed from tuberculous parents and placed in foster homes. These children all had positive tuberculin tests, and some had evidence of healed primary pulmonary lesions. This group was followed

for periods varying up to 20 years and showed a 3 per cent incidence of re-infection tuberculosis. Here again endogenous re-infection can be held responsible.

Bentley[4] has emphasized the well known fact that there are two critical age groups: Infancy is critical because of a tendency for the disease to extend locally and also by the blood stream to cause miliary disease and meningitis; adolescence is critical, particularly in girls, because endogenous re-infection is prone to occur during these years of stress. He points out that the closer tuberculin conversion occurs to the time of adolescence, the greater the likelihood of relapse.

From such published data one can only infer that the hazard of primary infection itself is considerable and that it is unrealistic to consider it only a benign, immunizing process. These conclusions are certainly not new nor revolutionary, and they are reviewed merely as background for the proposed scheme of treatment.

Drug Therapy

For primary infection

Drug treatment of primary tuberculosis, just as drug treatment of other forms of tuberculosis, is highly successful. Lincoln's mortality rate for children dropped from 21.5 to 1.5 per cent with the institution of drug therapy[5], a result so dramatic that one cannot question its effectiveness in children. Actually, drug therapy was given to only 35 per cent of her patients and was withheld from those children who were expected to recover without it. The wisdom of withholding drugs on this basis is currently a subject of rather fierce controversy. For our part, we do not believe that roentgenograms tell us enough, or that clinical finesse is sufficient to distinguish with any reliability which active lesion is dangerous and which is benign. For instance, it is well known that a primary lesion so small that it cannot be seen on roentgenogram may become, nevertheless, the source of meningitis or shed tubercle bacilli into the gastric contents. How then can one possibly observe a gross roentgenographic lesion and identify it as innocuous and not in need of specific drug therapy? Our policy has been to treat with anti-tuberculosis drugs all children who evidence an active tuberculous process. On our pediatric wards we treated 97 children (exclusive of the meningitis group) during 1953 and 1954. All had positive tuberculin reactions and definite roetgenographic changes varying from a simple primary process to extensive, progressive primary lesions and miliary disease. All received combined drug therapy which invariably included isoniazid. There were no deaths and no tuberculous complications. Symptomatic improvement, with clock-work regularity, followed the institution of drug therapy; in not a single patient did the disease increase. This is in marked contrast to primary tuberculosis treated without drugs, when often there is a prolonged period of fluctuation of the lesion before eventual recovery.

For endogenous re-infection

We cannot, then, doubt the value of drug therapy for the active primary infection itself. But what evidence do we have that it will prevent subsequent endogenous re-infection? We have no direct evidence—and for that matter, probably will not for many years to come—but we do have reason to hope that it will add a significant measure to security.

Early primary lesions under drug therapy seem to resolve more completely and with less residual scarring and calcification. The quantity of infectious material remaining in the child's body, then, would seem to be definitely reduced by drugs. They cannot undo, of course, the destructive changes that have already occurred, but they can halt almost immediately further progression of the inflammatory process. The quantity of infectious material remaining in the child's body, we believe, can be reduced by drug therapy, and this must surely diminish the opportunity for re-infection as well as the probable dosage of bacilli in the event of re-infection.

It is known that isoniazid causes rather profound changes in the tubercle bacilli themselves. Probably virulence is actually attenuated, and certainly growth is slowed. Oftentimes isoniazid forces bacilli into a dormant state from which they recover very slowly, if at all. It seems possible—but by no means certain—that the organisms which persist in these lesions are rendered less dangerous by prolonged exposure to isoniazid, and that their disease-producing potential is diminished, at least temporarily and

perhaps permanently. We know of several patients whose tuberculin tests became negative during therapy, presumably indicating actual sterilization of the lesion; however, this result is exceptional. Perhaps more effective drug combinations in the future can accomplish this with regularity.

In actual clinical application, then, we believe that a child should be given drug therapy whenever tuberculous activity can be demonstrated, and we tentatively propose these indications of activity. Doubtlessly, they should be modified with experience.

1. All primary tuberculous lesions showing radiologic evidence of activity
2. All recent tuberculin converters, regardless of radiologic evidence of disease (How recent should this be? Probably it is conservative to say that if a child has converted within a year, activity still persists within the lesion.)
3. All children under the age of 3 years who are found to have positive tuberculin reactions.

The scheme of drug therapy must be very flexible in order to fit this wide range of indications, and our treatment schedule today looks something like this:

For meningitis and miliary tuberculosis and comparably serious pulmonary lesions we give what we consider maximum therapy. This consists of isoniazid, daily streptomycin, and para-aminosalicylic acid. After initial improvement, usually within one to two months, streptomycin is changed from daily to twice weekly administration, and after a year isoniazid is continued by itself for another two years, giving a total of three years of therapy. Hospitalization is regarded as mandatory for about the first year, but after that treatment in the home becomes feasible.

For the average primary lesion with definite roentgenographic change, we believe that isoniazid and either stereptomycin or para-aminosalicylic acid should be given until resorption of the lesion is nearly complete. Then isoniazid alone may be given to complete a total of two years of treatment. Hospitalization is mandatory for children from underprivileged homes, but otherwise is optional. In making this decision, the advantages and disadvantages of hospitalization should be carefully weighed, with serious consideration being given to such advantages of hospitalization as improved rest and general nutrition, close medical supervision, the prevention of intercurrent infection, and the assurance of no interruption in drug therapy. It also removes a child, who is usually actively shedding tubercle bacilli, from contact with other children. If these facilities can be provided in the home, however, treatment might be undertaken in this category of patients outside the Sanatorium.

For those children with recently converted positive tuberculin reaction and no roentgenographic changes, we are now recommending that isoniazid alone be given in the home for a period up to two years. Effort should be made to insure optimum care and adequate rest, but the chilld should not be regarded as an invalid. We feel that treatment is justified in this relatively low risk group only so long as the treatment itself is both emotionally and physically harmless. The risk and benefit of treatment in this group must be acceptable on a prophylactic basis; and we feel that isoniazid alone when given in the home meets this requirement.

Summary

1. The declining incidence of tuberculous infection in the general population focuses attention on the individual tuberculin reactor as a carrier of viable tubercle bacilli and increases his importance in the overall control of tuberculosis.

2. Proper care of the child at the time of his first tuberculous infection may give a considerable degree of protection against future relapse—a matter of both individual and public health concern.

3. It is proposed that anti-tuberculosis drug treatment be given to the following categories of children with positive tuberculin reaction:

a. All children with evidence of recent tuberculin conversion (one year)
b. All children of three or less who are found to have a positive tuberculin reaction
c. All children with roentgenologic or bacteriologic evidence of active disease.

References

1. Lincoln, E. M.: Symposium on Tuberculosis; Course and Prognosis of Tuberculosis in Children, Am. J. Med. 9:628-632 (Nov.) 1950.
2. Hyge, T. V.: Epidemic of Tuberculosis in a State School, Acta Tuberc. Scandinav. 21:1-57, 1947.
3. Johnston, J. A., Howard, P. J., and Douglas, B. H.: Tuberculous Endogenous Reinfection, 20-Year Follow-up Study of Reactors After Removal from Contact, Am. J.

Dis. Child. 79:428-437 (March) 1950.
4. Bentley, F. J., Grzybowski, S., and Benjamin, B.: Tuberculosis in Childhood and Adolescence, National Association for the Prevention of Tuberculosis, Tavistock House North, Tavistock Square, London, W. C. 1, 1954.
5. Lincoln, E. M.: The Effect of Antimicrobial Therapy on the Prognosis of Primary Tuberculosis in Children, Am. Rev. Tuber. 69:682 (May) 1954.

RESULTS OF INSULIN COMA THERAPY IN A STATE HOSPITAL

ROBERT N. HARPER, M.D.
RALEIGH

This is a report of a study of 700 State Hospital patients treated with insulin coma between 1947 and 1955, undertaken in an effort to evaluate the treatment in an unselected group of State Hospital patients. It was hoped that it might also offer significant criteria for selecting patients for treatment and determining the optimum number of treatments yielding improvement and the depth of insulin coma utilized.

The difficulties of evaluating psychiatric therapy have been enumerated by David[1], who pointed out the lack of standardized criteria for selecting patients and assessing clinical changes. Bourne[2] emphasized the problem of distinguishing between clinical improvement and spontaneous remissions.

Wide variations in the technique of administering insulin coma have been reported, including the depth[3] and duration of coma, and the number of treatments[4]. A comparison of reports from different hospitals, such as those by West and colleagues[5], and Brannon[6], points up the lack of standardized criteria for evaluating improvement. The lack of adequate controls is a striking deficiency in most reports. Studies by Lifschultz[4a] and Gottlieb[4b], both of which include controls, are based on a maximum of 30 treatments, the adequacy of which may be questioned. Bond[7] found that before shock therapy was instituted at Pennsylvania Hospital, 31 per cent of the schizophrenic patients were recovered or much improved, indicating the rate of improvement in patients who do not receive insulin shock therapy. Studies by Notkin and others[8] include observations on controls.

Read before the Section on Neurology and Psychiatry, Medical Society of the State of North Carolina, Pinehurst, May 4, 1955.
From North Carolina State Hospital, Raleigh.

Reports of insulin coma therapy also vary with regard to the selection of patients. Hughs[9] and others indicate that results are better when treatment is given early in the disease, while Kalinowsky and Hoch[10] report a higher remission rate in acute than in chronic cases.

Finally, there is a wide divergence of opinion concerning the efficacy of the treatment. Negative opinions include those of Lifschultz[4a] and Bourne[2], while Shurley[3], Wilcox[11], Hughs[8], and Kalinowsky and Hoch[10] state unequivocally that insulin coma is the somatic treatment of choice in schizophrenia. Most of these authorities agree with Morrow[12] that adequate treatment must include psychotherapy. West and others[5], among the few to report adequate follow-up studies, point out that insulin coma is effective in restoring the patient to his pre-psychotic level of adjustment, but does not produce permanent resistance to schizophrenia. In general the reports reveal a similar trend of results in terms of overall improvement rates (Fogel[4c], 70 per cent; Hughs[9], 52 per cent; Brannon[6], 47.4 to 71.3 per cent; Paster[13], 24 per cent recovered, 57 per cent improved.)

There are virtually no reports of insulin coma therapy unassociated with other forms of therapy, such as psychotherapy or concomitant electroshock in cases failing to respond to insulin alone. In all studies, the additional privileges, extra nursing care, and high group morale enjoyed by insulin coma patients in psychiatric hospitals must be taken into account.

Material and Method

The present study includes all patients treated in this unit from April 1, 1947, through April 1, 1955. Seven hundred and sixty-three treatments were given to 737 patients. There were 2 deaths: one occurred 10 minutes after the termination of coma; the cause, undetermined at autopsy, was probably myocardial ischemia and circulatory collapse. The other, due to pulmonary edema and congestion with rapid cardiac decompensation, occurred during coma. Twenty-three patients who were transferred to other mental hospitals during or after treatment were excluded from the series. Ten cases were terminated early because of physical complications, but those which in-

cluded more than 10 treatments are included. There were 14 inadequate records. Of the remaining 726 cases, 26 represented retreatment. The total number of patients in the final series is 700.

This survey does not include matching controls. However, we wish to point out that over 75 per cent of the patients in our series had failed to respond to electroshock therapy or to have spontaneous remission after at least one year of illness. The expected improvement rate of untreated schizophrenia is reported to be about 58 per cent[14], which is significantly less than our 74.6 per cent improvement with insulin coma therapy.

In the State Hospital insulin coma units are operated for the male and female services. Each unit averages from 10 to 16 patients on active insulin coma therapy at any one period. Personnel consists of a physician, two nurses and four attendants, plus four student nurses for each unit. The physician is present in the unit during the treatment and is available the rest of the day.

Patients are selected for insulin therapy from the admission ward and the chronic wards of the State Hospital. The technique closely follows the rapid induction method of Shurley and Bond[3]. Treatment is given five days per week, Monday through Friday. The hypoglycemic state persists approximately four hours for each treatment. Coma is defined as that stage of hypoglycemia in which the patient fails to respond to appropriate stimuli such as being called by name or being physically manipulated. The coma is adjudged to begin at about stage two of Himwich's scale[1] and is terminated at the beginning of stage four. The patient is allowed to stay in coma for one hour. Regular insulin is used, and is given by deep intramuscular injections in doses ranging from less than 100 to 2,000 units. The coma is routinely terminated by the intravenous injection of 50 cc. of 33 1/3 per cent glucose solution followed by the oral administration of 33 1/3 per cent glucose in orange juice.

Concomitant therapy such as electroshock therapy, group or individual psychotherapy, and other specific treatment has been used on a good many patients in the series, but it is not possible to correlate this factor with the over-all results. Both patients and personnel in the insulin unit of the State Hospital possess high morale because of the individualized attention given each patient. The importance of this attention cannot be evaluated objectively, although it probably contributes greatly to the good results obtained from insulin therapy.

Evaluation of Results

The data for this study were collected from the records of all patients who received insulin coma treatment between April 1, 1947, and April 1, 1955, with the exceptions noted previously. The statistical data were coded on McBee statistical cards to include (1) sex, (2) age, (3) marital status, (4) onset of illness as described by the patient's immediate family, (5) year in which therapy was given, (6) number of comas, (7) number of courses of therapy, (8) diagnosis according to the *Diagnostic and Statistical Manual of the American Psychiatric Association*, (9) additional therapy such as electroshock therapy, group or individual psychotherapy, and lobotomy, (10) number of treatments, and (11) results.

The degree of clinical improvement was listed as 0 or unimproved for those patients who came to the insulin treatment unit from a chronic ward and after treatment returned to a chronic ward. Those patients who came to the insulin treatment unit from an admission ward and after treatment were sent to a chronic ward were also considered unimproved. One plus improvement includes those who came from a chronic ward or admission ward and under treatment improved sufficiently to adjust on a ward requiring more self-reliance and with the privilege of occasional home visits. Two plus improvement applies to those patients who were able to adjust in an extramural environment for four months or more after treatment before they had relapses necessitating readmission. In other words, this group includes patients making social recoveries who have had remissions. The 3 plus group includes patients who were discharged from the hospital within six months after therapy and who remain out of the hospital to this date.

Following the tabulation of data, multiple random correlations were attempted. Those correlations felt to be of clinical interest whether or not they were significant are represented in the following tables:

Table 1

Results in 726 Cases Treated with Insulin

	No.	0	2	1	3	Total Improvement
Maniac-depressive Reaction						
Manic type	22	3 (13.6%)	4 (18.2%)	2 (.09%)	13 (59%)	19 (86.4%)
Depressed type	21	2 (10.%)	3 (14.3%)	2 (10.%)	14 (66.7%)	19 (91%)
Others	8	3	0	2	3	5
Schizophrenia						
Simple	15	2	6	2	5	13
Hebephrenic	51	16 (31.4%)	8 (15.7%)	8 (15.7%)	19 (37.3%)	35 (68.6%)
Catatonic	138	40 (29%)	21 (15.2%)	23 (16.7%)	54 (39.1%)	98 (71%)
Paranoid	286	79 (27.6%)	69 (24.1%)	71 (24.8%)	67 (23.4%)	207 (72.4%)
Acute undifferentiated	38	5 (13.1%)	0	7 (18.4%)	26 (68.4%)	33 (86.9%)
Chronic undifferentiated	49	12 (24.5%)	15 (30.6%)	4 (8.2%)	18 (36.7%)	37 (75.5%)
Schizo-affective	36	9 (25%)	9 (25%)	4 (11.1%)	14 (38.8%)	27 (75%)
Paranoid state	4	1	0	0	3	3
Schizoid personality	3	1	0	1	1	2
Others	55	11 (20%)	6 (10.9%)	13 (23.6%)	25 (45.5%)	44 (80%)
TOTAL	726	184 (25.3%)	141 (19.4%)	139 (19.1%)	262 (36.1%)	542 (74.6%)

Table 1 lists the results of insulin coma therapy according to diagnosis. This table also gives an indication of the diagnostic distribution of the patient since this is an unselected series of patients who, for the most part, were legally committed. It shows the largest diagnostic classifications to be paranoid and catatonic schizophrenia (39.4 and 19.0 per cent of the total) followed by hebephrenic and the undifferentiated schizophrenia. The 3-plus recovery rate in the depressive group was 66.7 per cent, all of whom had previously failed to respond to electroshock therapy; 59 per cent of the manics recovered. Of the schizophrenic group, the most gratifying results were found in the acute, undifferentiated types (68.4 per cent full recovery) which perhaps is a tribute to the efficacy of early treatment. Among the schizophrenias the paranoid showed good response, but had a high relapse rate. The 55 patients listed as "others" include such diagnostic classifications as mental deficiency with psychosis, involutional reaction, and so forth.

Of the entire 726 patients treated, 262 or 36.1 per cent are still out of the hospital; 542 or 74.6 per cent showed worth-while clinical improvement, while 184 or 25.3 per cent failed to show an adequate response.

Tables 2 and 3 give the results of acute chronic cases. "Acute" is defined to include those cases treated within one year after the recognition of mental symptoms by the patient's family. "Chronic" is defined to include those cases treated more than one year after the recognition of symptoms by the patient's family. Of 146 patients treated within the first year of their illness, 123 (84.2 per cent) showed definite improvement, while 77 (52.7 per cent) have made full social recoveries. Of the 580 chronic cases treated more than one year after the onset of illness, 419 (72.2 per cent) improved, but only 183 (31.6 per cent) made full social recovery. These differences are statistically significant and illustrate the need for and advantage of early treatment in mental illness, particularly schizophrenia.

Table 4 shows the correlation of results with the number of comas given to the pa-

Table 2

Results in Acute Cases

Grade	No.	
0 —	23 (15.8%)	Unimproved
1 —	22 (15.1%)	
2 —	24 (16.4%)	123 (84.2%) Improved
3 —	77 (52.7%)	
TOTAL	146	20.1% of Total cases are acute

Table 3

Results in Chronic Cases

Grade	No.	
0 —	161 (27.8%)	Unimproved
1 —	119 (20.5%)	
2 —	117 (20.2%)	419 (72.2%) Improved
3 —	183 (31.6%)	
TOTAL	580	79.9% of total cases are chronic

Table 4

Results by Number of Comas

No. Comas	No. Cases	0	1+	2+	3+	Total Results
0-10	113	52 (46%)	19 (16.8%)	15 (32.7%)	27 (23.9%)	61 (54%)
10-20	53	12 (22.6%)	13 (24.5%)	8 (15.1%)	20 (37.7%)	41 (77.4%)
20-30	85	24 (28.2%)	20 (23.5%)	11 (12.9%)	30 (35.5%)	61 (71.8%)
30-40	145	28 (19.3%)	24 (16.6%)	34 (23.5%)	59 (40.7%)	117 (80.7%)
40-50	126	26 (20.6%)	26 (20.6%)	25 (19.8%)	49 (38.9%)	100 (79.4%)
50-60	98	17 (17.3%)	22 (22.4%)	26 (26.5%)	33 (33.7%)	81 (82.7%)
60-70	104	23 (22.1%)	17 (16.3%)	20 (19.2%)	44 (42.3%)	81 (77.9%)
70-80	2	2	0	0	0	0
	726	184 (25.3%)	141 (19.4%)	139 (19.1%)	262 (36.1%)	542 (74.6%)

tient. The 113 patients receiving less than 10 treatments largely represent those cases treated in the earlier years of 1947 and 1948 when smaller doses of insulin were used than are now employed. The most gratifying improvement rate occurred between the series of 30 and 60 comas. I feel that less than 40 comas constitutes inadequate treatment, so that the large number of cases previously treated at this hospital with a smaller number of comas has an adverse influence on the total recovery rate reported here.

Table 5 shows the correlation between the age of the patient and the results of insulin coma. Ninety-three per cent of the patients ranged from 20 to 50 years of age, while five per cent were younger than 20 and only 2 per cent exceeded 50 years. Due to the small number in the extreme age groups, a statistically significant correlation between age and improvement could not be established. The data of the youngest group suggest increased improvement, but this might be due to the acuteness of the psychosis in that group.

Table 6 shows the results correlated with the sex. The greater number of female patients as well as the higher rate of improvement among the female patients is most interesting. Several variable factors which influence this striking difference have been considered. A great many of the acutely ill, previously well adjusted psychotic young men in the general population are admitted either to Veterans Administration hospitals directly or are transferred from the admission ward of the State Hospital to the Veterans Hospital. Perhaps the absense of this more treatable group accounts partially for the disparity between the improvement rates for males and females in this series, since there should be little difference in the expected recovery rates between the sexes.

Table 7 shows the results of a second course of insulin in 26 patients. Following the first course of insulin, 6 of these 26 made no improvement at all; 5 made 1-plus improvements; 15 made social recoveries, but

Table 5

Results by Age Group

Age (years)	No.	Degree of Improvement 0	1	2	3	Total Results
10-20	37	5 (13.5%)	7 (18.9%)	8 (21.6%)	17 (45.9%)	32 (86.5%)
20-30	255	70 (27.4%)	46 (18%)	44 (17.2%)	95 (37.2%)	185 (72.6%)
30-40	253	68 (26.9%)	48 (18.9%)	54 (21.3%)	83 (32.8%)	185 (73.1%)
40-50	164	35 (21.3%)	35 (21.3%)	31 (18.9%)	63 (38.4%)	129 (78.7%)
50-60	17	6	5	2	4	11
Totals	726	184 (25.3%)	141 (19.4%)	139 (19.1%)	262 (36.1%)	542 (77.9%)

Table 6

Results According to Sex

Female Improvement		No.			Male Improvement		No.		
0	—	95 (20.8%)		Unimproved	0	—	89 (33.1%)		Unimproved
1	—	92 (20.1%)			1	—	49 (18.2%)		
2	—	85 (18.6%)	362	(79.2%) Improved	2	—	56 (20.8%)	180	(69.9%) Improved
3	—	185 (40.5%)			3	—	75 (27.9%)		
Total		457			Total		269		

Table 7

Results with Repeat Courses of Insulin

First Course Improvement		No. Patients		Second Course Improvement		No. Patients	
0	—	6 (23.1%)	Unimproved	0	—	3 (11.5%)	Unimproved
1	—	5 (19.2%)		1	—	5 (19.2%)	
2	—	15 (57.7%)	76.9% Improved	2	—	13 (50%)	88.5% Improved
3	—	0		3	—	5 (19.2%)	
Total		26		Total		26	

later relapsed. With their second course of insulin, 3 failed to respond; 5 made 1-plus improvement; 13 made social recoveries, but later relapsed; and 5 made social recoveries sufficient to permit them to remain outside the hospital. Although not statistically significant, these results indicate that this group of 26 patients responded better to their second course of insulin than to their first course.

Conclusion

1. Insulin coma therapy is the somatic treatment of choice for schizophrenia both acute and chronic.

2. Patients with affective psychosis who have failed to respond to electroshock often respond well to insulin coma therapy.

3. The best results were obtained in those cases where treatment was instituted within one year after the onset of symptoms. This dramatizes the need for early diagnosis and treatment.

4. Because of the small number involved, statistical significance could not be established in the case of the 26 patients who received a second course of insulin. Their response would indicate, however, that treatment is not contraindicated and would bear further investigation.

5. The use of insulin coma therapy at the State Hospital has resulted in the return home of many patients who, without such therapy, still would be hospitalized.

References

1. David, H. P.: A Critique of Psychiatric and Psychological Research on Insulin Treatment in Schizophrenia, Am. J. Psychiat. 110:774-776 (April) 1954.
2. Bourne, H.: The Insulin Myth, Lancet 265:964-968 (Nov.) 1953.
3. Shurley, J. T., and Bond, E. D.: Insulin Shock Therapy in Schizophrenia, V. A. Technical Bulletin, T. B. 10:501 (April 16) 1948.
4. (a) Lifschutz, J. E.: Insulin Coma Therapy; A Study of results in an Army Hospital, Am. J. Psychiat. 111:466-469 (Dec.) 1954. (b) Gottlieb, J. S., and Huston, P. E.: Treatment of Schizophrenia, A Comparison of Three Methods; Brief Psychotherapy, Insulin Coma, and Electroshock, J. Nerv. & Ment. Dis. 113:237-246 (March) 1951. (c) Fogel, E. J.: Continued Insulin Coma in Schizophrenia, Dis. Nerv. Sys. 15:174-176 (June) 1954.
5. West, E. H., Bond, E. D., Shurley, J. T., and Meyers, C. D.: Insulin Coma Therapy in Schizophrenia; A 14-Year Follow-up Study, Am. J. Psychiat. 111:583-589 (Feb.) 1955.
6. Brannon, E. P., and Graham, W. L.: Intensive Insulin Shock Therapy: A Five-Year Survey, Am. J. Psychiat. 111:659-663 (March) 1955.
7. Bond, E. D.: Results of Psychiatric Treatments with a Control Series; A 25-Year Study, Am. J. Psychiat. 110-8: 561-566 (Jan.) 1954.
8. Notkin, J., Niles, C. R., DeNatale, F. J., and Whitman, G.: Comparative Studies of Hypoglycemic Shock Therapy and Control Observations of Schizophrenia, Am. J. Psychiat. 96:681, 1939.
9. Hughs, J.: Current Evaluation of Insulin Therapies, A. Res. Nerv. & Mental Dis., Proc. 31:193-198, 1953.
10. Kalinowsky, L. B., and Hoch, P. H.: Shock Treatment, Psychosurgery, and other Somatic Treatments in Psychiatry, New York, Grune & Statton, 1952.
11. Wilcox, P. H., and Adler, I.: Shock Therapy, Progress in Neurology and Psychiatry, New York, Grune & Stratton, 1952, vol. 7, pp. 540-575.
12. Morrow, T. F., Laucks, S. P., McKnight, W. K.: Insulin Coma and Group Psychotherapy, Arch. Neurol. & Psychiat. 68:491-497, 1952.
13. Paster, S., and Holtzman, S. C.: A Study of 1,000 Psychotic Veterans Treated with Insulin and Electroshock, Am. J. Psychiat. 105:811-814 (May) 1949.
14. Temporary Commission on State Hospital Problems in New York on Insulin Therapy, quoted by Shurley, J. T., and Bond, E. D.(3).

Abstract of Discussion

Dr. Thomas Wright (Charlotte): I am fortunate in having been associated with Drs. Shurley, Bond, Rivers and West at the Pennsylvania Hospital. Dr. Harper bears out that they have always said: that insulin coma therapy is beneficial, primarily in the schizophrenic.

In evaluating this treatment, we were always conscious of three factors: First is the spontaneous

recovery rate in schizophrenia. That is a difficult point to determine. According to my latest information, (it varies with different reports) it is sometimes placed as low as 10 per cent, but averages about 20 per cent. Second, most affective psychoses will recover spontaneously or with electroshock. Many of the earlier reports contain a large element of these psychoses, which should respond to this treatment. Third, insulin coma patients are an elite group in psychiatric hospitals. We tried many experiments, trying to eliminate all three factors in order to evaluate insulin shock *per se*. Whether it is permanently beneficial or not is open to question, primarily because of the spontaneous recoveries and the high rate of relapse. One cannot fail, however, to be impressed by the effects of insulin coma treatment on schizophrenia.

In evaluating electroshock, spontaneous recovery rate is also a factor to be considered. Many patients recover, with or without treatment, after a time. I feel that electroshock definitely shortens this period. On the other hand, even if the schizophrenic patient is temporarily relieved of the psychosis, he still has a poorly integrated personality, and this factor undoubtedly accounts for the high rate of relapse.

I am convinced that insulin coma has a definite effect during the psychotic episode of the schizophrenic personality. The treatment may be enough to keep the patient well, but in most instances he will have a relapse if his environment isn't improved or his conflicts aren't solved by psychotherapy.

I sincerely hope that state hospitals and other sanatoriums will continue to use this form of treatment. In private practice we lack the facilities to do so.

Question: I would like to ask how many complications were encountered in the 700 patients.

Dr. Harper: I mentioned the 2 patients whom we lost, one about 10 minutes after therapy and one during therapy. The first death was probably due to myocardial ischemia and the second to pulmonary edema and cardiac failure. These are the only deaths we have had. Occasionally we have encountered hypersensitive reactions to the insulin, but we have frequently been able to eliminte these reactions by changing preparations. We have had to discontinue treatment in certain cases for such reasons as lung abscesses and tuberculosis. On the whole, complications have not been a great problem.

Dr. J. D. Bradley (Asheville): Do you use any protractive coma?

Dr. Harper: Not deliberately. We are rather glad sometimes, after the patient has recovered, that it happened, because we think we see improvement in these cases. We naturally do everything we can to bring the patient out of the coma, but in some instances the results have been gratifying.

Dr. James W. Murdoch (Butner): My experience in phychiatry goes back more than 30 years, long before the days of insulin coma or other modern methods of treatment. Although I am not able to quote statistics, in the state hospital where I worked, the patients who did get better took a long, long time to do so. Very rarely were they discharged within nine months or a year. Nowadays we get them out much quicker than that. I think the main benefit of insulin coma lies not so much in the number of actual recoveries but in the shortened period of treatment.

About the duration of coma: A doctor with whom I was working once induced a coma that lasted 10 hours. It was fairly simple to get the patient out, but on the second day he induced a coma lasting 10 weeks. At the end of that time the patient came around quickly. She had been quite demented, but was now a placid, easily managed patient.

You mention the effect of treatment on patients who had had symptoms for more than a year. What is your limit with regard to duration of illness.

Dr. Harper: I don't recall that we had any fixed limit. We treated one patient who had been ill for 20 years.

Dr. Marion M. Estes (Raleigh): These cases were selected very much at random. For instance, a badly deteriorated patient was selected because he impressed us as being a suitable candidate for treatment. We treated several patients who had been institutionalized for 10 years, sometimes with surprising results.

POLYOSTOTIC FIBROUS DYSPLASIA WITH EXTRASKELETAL FEATURES

Report of a Case with Postmortem Observations

JOHN C. WIGGINS, JR., M.D.
WINSTON-SALEM

Polyostotic fibrous dysplasia with bizarre extraskeletal manifestations — "Albright's syndrome" — remains obscure in etiology and uncommon in occurrence since the description of 5 cases by Albright and his associates[1] in 1937. At that time the authors outlined the three cardinal features:

"(a) Bone lesions which have a marked tendency to be unilateral and which show osteitis fibrosa on histologic examination.

(b) Brown nonelevated pigmented areas of skin which tend to be on the same side as the bone lesions.

(c) An endocrine dysfunction which in females is associated with precocious puberty."

Historical Aspects

Interest in fibrocystic diseases of bone was strongly stimulated in 1925, when the removal of a parathyroid tumor from a patient with osteitis fibrosa cystica produced dramatic results[2]; and when parathormone was discovered. It soon became evident, however, that some cases which at first glance seemed to be hyperparathyroidism had no parathyroid tumor or hyperplasia. Hunter and Turnbull[3] in 1931 distinguished between the generalized disease with hyperparathyroidism and the focal condition where no such metabolic alteration was present. In 1933 Jaffe[4] also found evidence of such a new entity in his cases. Numerous instances[5,2] of localized osteitis fibrosa

From the Departments of Medicine of the City Memorial Hospital and The Bowman Gray School of Medicine of Wake Forest College.

were reported during this period, some with extraskeletal features. Confusion still remained, however, until Albright and his coworkers[1,6], in 1937 and later, elucidated the distinguishing features of this entity.

Attention was then given this newly recognized syndrome by other investigators; of these, Lichtenstein and Jaffe[7] felt that the bone lesions were the most important feature of the disorder and therefore used the term "polyostotic fibrous dysplasia." In 1942, however, these authors[8], reporting 15 cases of their own with 75 from the literature, used the term "fibrous dysplasia of bone," thus including monostotic lesions as well. It has been questioned [9,2] whether or not single bone lesions without extraskeletal changes should be included in the diagnosis of this disease.

At present the older terms "focal osteitis fibrous cystica" and "osteitis fibrous disseminata" have been largely replaced by the terms "polyostotic fibrous dysplasia," "fibrous dysplasia of bone," and—particularly in the cases with the more complicated manifestations—"Albright's syndrome."

Less than 50 cases of this complete syndrome have been reported[10], though Pritchard[2], in his thorough review of the literature in 1951, found 79 cases of fibrous dysplasia with cutaneous pigmentation. In 1954 Belaval and Schneider[11] added 2 cases with pigmentation and one with precocious puberty; and Harriman and Miller[12] reported a case with pigmentation complicated by changes ascribed to lipoid granulomatosis.

Presented here is a case of polyostotic fibrous dysplasia marked by characteristic skin pigmentation, mental deficiency, and minor neurologic abnormalities, with death from apparently unrelated cardiac disease at the age of 32 years. Autopsy observations are reported.

Case Report

The patient was a 32 year old white man, formerly a truck driver, who was first admitted to City Memorial Hospital because of shortness of breath.

First examination

He had been examined a year previously in the Outpatient Department of the North Carolina Baptist Hospital because of "heart trouble and constant headache." The headache, as well as right frontotemporal enlargement and tenderness, was dated from a head blow at the age of 5 years which was severe enough to cause five hours of unconsciousness. Later he stated that 18 months before this examination a blow from a "blackjack" resulted in a right parietal fracture, allegedly relieving the headache for several months. There was a history of defective vision in the right eye, poor hearing on the left, and a frequently noted anosmia since childhood.

He also complained of "tight pressure pain" in the chest for 10 years, which had been worse for the past year, usually in the anterior axillary line at the level of the fifth rib, occasionally substernal, and sometimes radiating down the left arm. For about three years he had noticed palpitation on exertion, and for three months he had suffered from exertional dsypnea, orthopnea, and paroxysmal nocturnal dyspnea. He had been told he had a heart murmur and heart trouble in childhood, and that he had always been rather asthenic. For a year and a half he had had frequent short episodes of dizziness, blurred vision, diplopia, and weakness. All symptoms had improved after digitalization two weeks before this examination.

He had had no diseases suggestive of rheumatic fever, jaundice, or encephalitis. Curious areas of pigmentation on the left side of the neck, left buttock, and left thigh had been present since birth. The patient stated that there had previously been a large brown spot on the left posterior portion of the trunk, but this spot was no longer present. Fractures had occurred in both legs, ribs, and skull.

He had always been considered by his family to be "peculiar," dull, and different from his siblings, and he had had frequent episodes of nervousness and depression. He finished the seventh grade with difficulty at the age of 15 years.

There were no known familial diseases and no history of bone diseases, abnormal pigmentation, or endocrine disorders.

Physical examination revealed a rather dull, sullen, apprehensive young man. The head was large and asymmetrical, with a tender right frontotemporal prominence, irregularity and bulging of the right occipital area, and wide-set eyes. The left palpebral fissure was wider than the right, and there was a slight esophoria. There were irregular areas of light brown pigmentation over the left side of the neck, left buttock and posteromedial surface of the left thigh. The heart was enlarged to the left 5 cm. beyond the midclavicular line; and an aortic systolic thrill, a grade 4 harsh aortic systolic murmur, and a grade 2 soft early diastolic murmur along the left sternal border were noted. Blood pressure was 98 systolic, 72 diastolic, pulse 82, respiration 16. The edge of the liver was felt 6 cm. below the right costal margin, and was tender. Moderate hyperesthesia was reported over the right leg, with slight hypesthesia of the right buttock and thigh and of the right arm and forearm. There were no abnormal alterations in the reflexes. Diagnoses were rheumatic heart disease with aortic stenosis and possible insufficiency, and possible cerebral trauma. The patient refused further study at this time.

First hospital admission

One year after the previous examination the patient was admitted to City Memorial Hospital because of increased symptoms of congestive heart failure for four months, following an episode of unconsciousness of unknown duration experienced while he was driving a truck. After this he had numerous momentary "blackouts." Three weeks before admission he experienced a sudden severe substernal pain accompanied by profuse sweating; after this he had frequent scapular pains on the right, radiating to the left shoulder and arm, lasting three or four minutes and usually brought on by paroxysms of coughing. For a year he had had frequent dull aching in his legs.

Physical examination: Blood pressure was 120

Fig. 1. Photograph of patient in case reported showing facial asymmetry, lateral displacement of eyes, and right frontal bosselation.

systolic, 80 diastolic, pulse 88, respiration 36, temperature 98.8 F. The patient was lying in bed in acute respiratory distress. Coarse crackling rales were heard in both lung bases posteriorly, and expiratory rhonchi were scattered through both lung fields. The heart was enlarged to the left anterior axillary line in the sixth intercostal space, and 2 cm. to the right of the sternum. Occasional extrasystoles occurred. The pulmonic second sound was increased. The systolic thrill and murmur were present as before, with no diastolic murmur. The liver was larger than before. The lower extremities were edematous. The areas of brown pigmentation previously mentioned were noted to have irregular outlines and serrated borders. The facial and cranial bones were asymmetrical, with an especially prominent right frontotemporal enlargement.

Laboratory data: The erythrocyte sedimentation rate was 23 mm. per hour (corrected). The Sulkowitch test showed hypercalcuria (3 plus). No Bence-Jones protein was present. Levels of nonprotein nitrogen, serum chlorides, carbon dioxide combining power, serum proteins, and the albumin-globulin ratio were normal. Serum calcium values were 9.4 and 10 mg., serum phosphorous 3.75 and 4.6 mg., alkaline phosphatase 10.1 and 10.6 Bodansky units, and acid phosphatase 3 Gutman units. Serologic test for syphilis was negative. The electrocardiographic interpretation was normal sinus rhythm, right heart strain pattern, and digitalis effect, with a possible alternative diagnosis of anterior wall coronary pattern.

Roentgenograms (interpreted by Dr. H. S. Adams): The heart was greatly enlarged, and there was evidence of passive congestion of the lungs. There were cystic changes in the third left rib posteriorly. Skull films showed tremendous thickening of the frontal bone, much greater on the right side, with an extreme degree of thickening of the floor of the anterior fossa, especially on the right, with several cystic areas. The right malar arch and right maxilla were similarly affected. In the right side of the anterior two thirds of the third lumbar vertebra there was a large cystic area. The bony pelvis was asymmetrical, with a broadening of the right ischium, cystic change in the inferior portion of the right acetabulum and right pubic arch, and cystic areas in the right femoral head, neck, and proximal portion of the shaft. The roentgenologist considered the most likely diagnosis to be fibrous dysplasia of the bone.

Course in hospitals: Congestive heart failure responded to treatment. Complaints were of occasional headaches, leg ache, and toothache. There was some mental confusion during the last few days of the patient's stay, but the patient was discharged improved after 21 days.

Second hospital admission

Five days after being discharged the patient was readmitted because of severe dyspnea and an increase in substernal pain.

Physical examination: The blood pressure was 104 systolic, 80 diastolic, pulse 114, respiration 30, temperature 99.8 F. There was an increase in edema of the legs and feet, and numerous petechial hemorrhages were scattered over the chest, abdomen, and back.

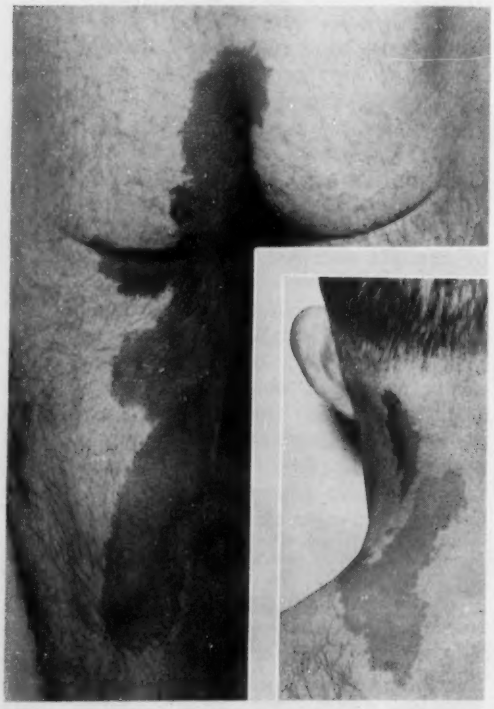


Fig. 2. Predominantly unilateral cutaneous pigmentation of the buttocks, thigh and neck (inset) demonstrating the irregular, serrated, "coast-of-Maine" borders of the skin lesions.

Laboratory data: The white blood count was 13,300, with 90 per cent neutrophils and 4 per cent bands. Urine contained albumin (2 plus) and, on the day of death, numerous finely granular casts.

Course in hospital: The patient continued to have chest pains and cough. Three days after admission he had an episode of paroxysmal atrial tachycardia which lasted one and one-half hours; after this, hemoptysis and numerous bouts of tachycardia ensued. He died five days after admission.

Postmortem observations

The most significant notations on gross examination (by Dr. D. S. Morris) were as follows:

Neck: The thyroid gland was grossly unremarkable. Two parathyroid glands were found on the right, one on the left; and neither showed any gross abnormality.

Thorax: Seven hundred-fifty cubic centimeters of clear yellowish fluid was encountered in each pleural cavity. The left third rib posteriorly showed loss of bony trabeculae, and was grey, soft and pliable. The pericardial sac was thin, and its cavity contained an estimated 100 cc. of clear yellowish fluid. The thymus was largely replaced with adipose tissue. The heart was enlarged, weighing 705 gm., and showed much hypertrophy and dilatation of all four chambers. The epicardial surface overlying the anterior and lateral portion of the left ventricle near the apex had a dusky red appearance. In the apical region of the left ventricular cavity was a mural thrombus measuring 4.0 cm. in the greatest dimension. Both the mitral and tricuspid rings were dilated. The aortic valve leaflets were markedly thickened, with rolling and eversion of the edges, fusion of commisures, and formation of calcific nodular areas on the superior surface. The valve was stenosed to a diameter of only 4.0 mm. There was no evidence of coronary atherosclerosis, and aortic sclerosis was minimal. There were firm, red-black areas of infarction in the upper and lower lobes of the left lung and the upper and middle lobes of the right lung.

Abdomen: The peritoneal cavity contained 1,500 cc. of clear yellowish fluid. The liver weighed 1,660 Gm. and had a finely yellow-mottled surface, with a typical "nutmeg" appearance on cut section.

Retroperitoneal region: The adrenal glands were grossly normal. The renal capsules stripped with ease, revealing a smooth surface with scattered tan-brown areas measuring 2 to 3 mm. In the third lumbar vertebra a focal greyish area measuring 5 cm. was encountered.

Central nervous system: The skull was asymmetrical, with prominent bosselation and thickening, up to 2.8 cm., in the right frontal and parietal bones, and massive thickening, up to 4.0 cm., of the orbital plate of the right frontal bone. Cut sections of these areas of bony thickening were greyish. On examination of the brain the inferior gyri of the right frontal lobe were seen to be compressed, but in multiple coronal sections through the brain no gross pathologic changes were observed.

Histologic examination

Skin: Sections from pigmented areas disclosed prominent increase in melanin in the basal layer of the epidermis.

Lymph node: There was moderate hyperplasia of reticuloendothelial cells of the sinusoids.

Heart: The section of aortic valve revealed extreme thickening with hyalinization of fibrous tissue and focal nodular areas of calcification. The aortic leaflet of the mitral valve also showed some hyalinization of proliferated fibrous tissue. Myocardium from the ventricular septum showed much hypertrophy of myocardial fibers, with large, rectangular nuclei. Focal areas of fibrosis with replacement of myocardial fibers were present. In sections from the anterolateral wall of the left ventricle, myocardial fibers were replaced by fibrous scar tissue. The overlying laminated thrombus was composed of fibrin and erythrocytes showing varying degrees of lysis, and at the juncture between the endocardium and thrombus there was active organization characterized by proliferation of capillaries and fibroblasts and the presence of scattered lymphocytes. In some areas medial hypertrophy and varying degrees of subintimal fibrous thickening were noted in the small muscular arteries.

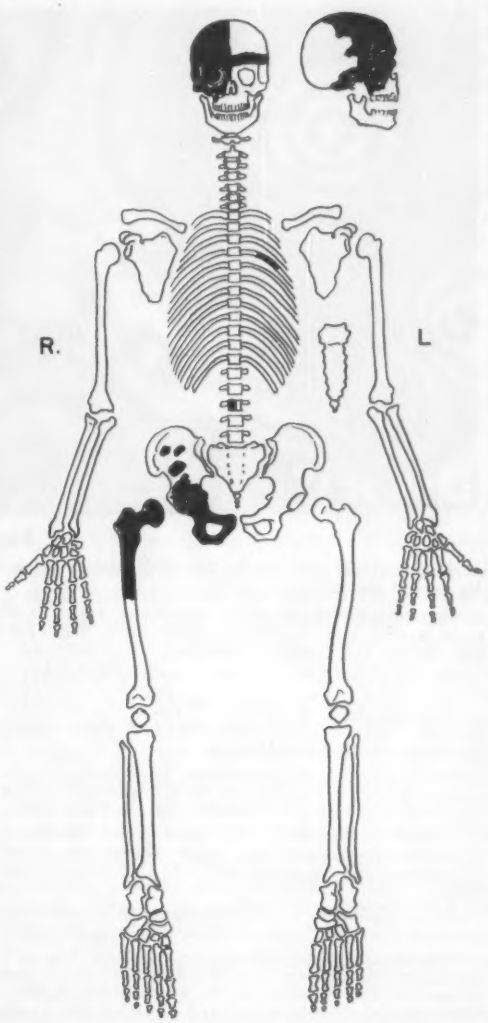


Fig. 3. Diagram illustrating the predominantly unilateral, spotty distribution of the bone lesions in this patient. (After Albright)

Lungs: Many alveoli contained histiocytes laden with brown hemosiderin granules, and in some sections extensive extravasation of erythrocytes filled the alveolar spaces. In the infarctions described grossly there was complete necrosis of pulmonary

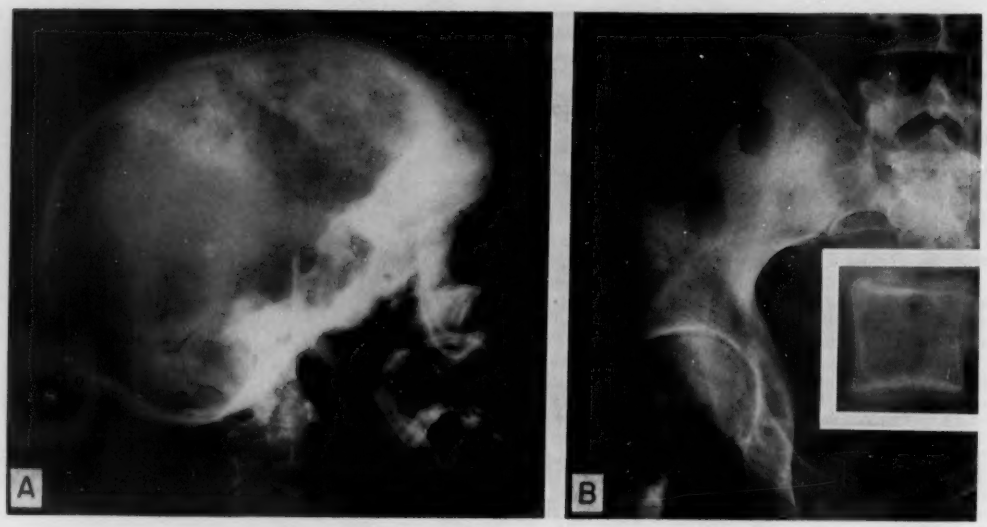


Figure 4

A. Hyperostotic changes in the skull and facial bones, with massive thickening of the frontal bone and its orbital plate.

B. Roentgenogram showing broadened right ischium, cystic appearance in the inferior portion of the right acetabulum and right public arch, and cyst-like areas in the right femur. (Inset) Large cystic area in the third lumbar vertebra.

parenchyma with only "ghost" remnants of architecture, and hemosiderin-laden histiocytes were numerous in peripheral areas.

Liver: There was prominent hyperemia of the central zones of the lobules with dilatation of the sinusoids and associated atrophy of liver cell cords.

Spleen: In the small muscular arteries associated with the malpighian corpuscles there was some thickening and hyalinization of the intima and media.

Adrenal glands: Focal collections of lymphocytes were encountered in the medulla of both glands.

Kidneys: Ovoid to circular areas of calcium salt deposition were present in the interstitial tissue and in some of the papillae. In the prostate gland, seminal vesicals, thyroid gland and parathyroid gland, no pathologic changes were seen.

Brain: In several representative sections no notable pathologic changes were encountered.

Pituitary gland: No notable pathologic changes were found.

Bone: In the third lumbar vertebra there was proliferation of fibrous tissue. The fibers were eosinophilic and rather delicate, and contained a moderate number of well differentiated spindle fibroblasts. In some areas of this proliferated fibrous tissue there was a deposit of eosinophilic osteoid material between tissue cells. In some fields this deposit had proceeded to form rather bizarre bony trabeculae. Bone sections from the frontal region and orbital plate showed similar fibrous tissue proliferation and the formation of many bizarre bony trabeculae in the fibrous tissue sheets. In the right parietal bone were irregular areas of calcification and bony trabeculae in the loose to dense fibrous tissue. The third rib showed marked fibrous tissue proliferation replacing bone, and the development of small, irregular, bizarre trabeculae in the fibrous tissue sheets. A section from an uninvolved portion of the rib showed normal and rather cellular bone marrow.

Anatomic diagnosis: (1) Polyostotic fibrous dysplasia of bone. (2) Chronic, calcific, stenosing rheumatic aortic valvulitis. (3) Marked hypertrophy and dilatation of all chambers of the heart. (4) Myocardial infarct, anterior lateral wall of left ventricle, with fibrosis and mural thrombus formation. (5) Bilateral hydrothorax, hydropericardium, ascites, peripheral edema. (6) Multiple bilateral pulmonary infarcts. (7) Marked chronic passive hyperemia of liver. (8) Compression distortion of the inferior gyri of the right frontal lobe. (9) Cutaneous pigmentation due to melanosis of the basal layer of epidermis.

Comment

Skeletal abnormalities were first noted in this patient at the age of 5 years (allegedly related to trauma), with asymmetrical, tender bony prominences of the skull, particularly on the right, and constant dull headache. Prior to death he complained of leg pains. He had had five fractures (extremities, skull and ribs) in the past. Roentgenographic survey revealed changes compatible with polyostotic fibrous dysplasia: spotty, localized, predominently unilaterial osseous lesions, with normal-appearing bone elsewhere; and skull changes which were mainly hyperostotic, diminishing the anterior fossa, obliterating the right maxillary sinus, and deforming the face.

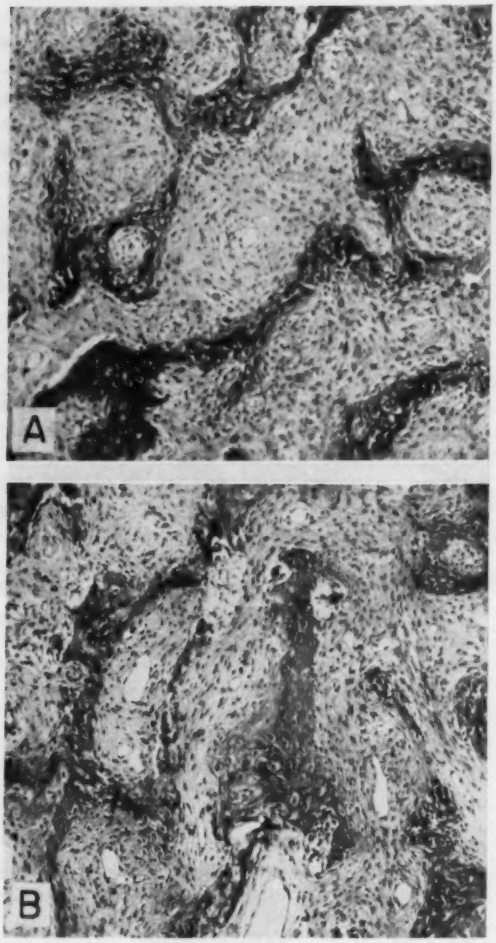


Fig. 5A. Photomicrograph of section of right frontal bone (x 65). Thin, curled trabeculae have a fairly regular arrangement in moderately cellular fibrous tissue.

B. Features of deposition and resportion of metaplastic bone. Right frontal bone (x 65).

Except for sexual precocity in females, the bone lesions are the primary clinical manifestations of Albright's syndrome. Pains in the extremities were presenting complaints in over 70 per cent of the cases reported by Belaval and Schneider[11], and fractures, frequently multiple, had occurred in 36 of the 39 cases reviewed by Dockerty and his associates[13]. The skeletal changes evolve slowly, usually reaching a maximum before maturity, but in the more severely affected patients there may be much deformity and crippling in early childhood[2]. Closure of the epiphyses usually signals cessation of activity of the osseous lesions, but several cases[3,13] indicate the possibility of continuation or reactivation of the process in adult life. The bone abnormalities are varied, usually beginning with proliferation of fibrous tissue in the medulla, replacing at first the marrow, then the cancellous bone and cortex. Metaplastic bone may then be laid down in small masses or irregular trabeculae which sometimes become a dense mass, and sometimes form a uniform or irregular honeycomb structure; or large islands of cartilaginous masses may occasionally develop, a process which does not occur in the monostotic lesions, as Valls, Polak and Schajowicz[14] have pointed out. Multinuclear giant cells are frequently seen in groups, especially in vascular or hemorrhagic areas.

A peculiar feature pointed out by Albright[1,15] is the propensity for a regional and unilateral distribution, so that even in extensive bilateral disease there is usually a unilateral predominance. The extremities are most often affected, the lower limbs more frequently than the upper, with the upper end of the femur being most commonly involved. The skull and face are the next most common sites, with lesions of the trunk bones occurring somewhat less often. As in this case, the skull lesions are generally hyperostotic, marked by great thickening and density in the base, encroachment on the cranial cavity, and thickening of the vault through enlargement of the outer table. In this patient the eyes were forced apart, a slight left proptosis was produced, and the right maxillary sinus was obliterated. Uninvolved bone retained its normal structure, as distinguished from that in hyperparathyroidism where the whole skeleton is affected by a generalized metabolic disorder.

The areas of pigmentation in this patient were said to have been present since birth, and were the characteristically flat, serrated, "coast-of-Maine," *café-au-lait* spots described by Albright[15]. They were unusual in being present on the opposite side from most of the bone lesions. Another unusual feature here was the history of a previous pigmentation on the posterior trunk, of which there remained no evidence.

Cutaneous pigmentation is the most frequent extraskeletal manifestation of the syndrome, and occurred in 60 out of 100 cases

of fibrous dysplasia reviewed by Belaval and Schneider[11]. It may occur over extensive areas or in small spots, and represents an increase in the melanin content of the basal layer of the epidermis.

Endocrine manifestations, which consist mainly of puberal and somatic precocity, were not observed in this patient; and indeed precocious puberty rarely if ever occurs in males with this disease. This may be, as Albright and Reifenstein[15] suggested, because the mechanism which stimulates puberty in the male is different from that in the female. In the latter the follicle-stimulating hormone (FSH) of the anterior pituitary leads to the production of estrogen, whereas luteinizing hormone (LH) stimulates the formation of androgen in the male. Perhaps an anterior pituitary disturbance mediated through the hypothalamus permits release of FSH but not of LH. Such a mechanism would also be compatible with the frequently observed hastening of skeletal growth in some males as well as females, with early closure of the epiphyses and somatic maturity. Individuals thus affected are tall for their ages in early childhood, but as adults are often shorter than the average.

Neurologic changes in these cases can often be ascribed to the mechanical effects of bony overgrowth. The anosmia, poor vision, esophoria, decreased hearing, and tinnitus reported by this patient were probably due to direct pressure on the respective cranial nerves. Other changes in this case were uncertain and subjective (areas of hypesthesia), though objective neurologic abnormalities have been reported in several patients[6,12,14]. The mental deficiency in this man is not an uncommon feature of the syndrome[15].

Increased incidence of *congenital defects* in this condition has been reported by several authors[2,16]; therefore, evidence of congenital heart disease was carefully sought but was not substantiated by autopsy. The cardiac condition of this patient was not related in any ascertainable way to the syndrome reported here.

Laboratory data: An elevated serum alkaline phosphatase level and a hypercalcuria (by Sulkowitch test) were the only pertinent clinical laboratory abnormalities noted in this case. The most consistent change in previously reported cases has been an elevated alkaline phosphatase level, Dockery and others [5f] having noted such a change in 19 of 24 cases in which the test was performed. In the majority of cases the levels of calcium and phosphorous in the serum are normal, as indicated in the numerous cases cited by Pritchard[2]. The hypercalcuria is not surprising, as individuals with fibrous dysplasia are frequently in negative calcium balance[2].

Etiology

Despite the interest and efforts of numerous investigators, the cause of this disease still remains obscure. The most logical explanation remains that of Albright and his associates[1,15], who postulated that the syndrome was a manifestation of a widespread neurologic disorder which caused the bone and pigment changes and through the hypothalamus initiated the endocrine disturbance. They felt that the mental deficiency and neurologic changes found in some of these patients supported this hypothesis. Albright also pointed out that another explanation suggested by Thannhauser[17] could not be disproved — namely, that the overgrowth of bone at the base of the skull could possibly cause the endocrine changes through pressure on the hypothalamus.

Differential diagnosis

Hyperparathyroidism with osteitis fibrosa generalisata is differentiated from Albright's syndrome by its lack of skin lesions or precocious puberty, its rarity in childhood, and its associated weakness, indigestion, and renal manifestations. The bones in hyperparathyroidism are affected generally with osteoporosis, whereas the spotty distribution of the lesions of fibrous dysplasia contrast with normal bone elsewhere. The lamina dura is not disturbed in Albright's' syndrome, but is commonly resorbed in parathyroid disease. The osteosclerotic lesions and the craniofacial asymmetries of fibrous dysplasia are absent from the latter condition. Serum calcium levels are usually high and phosphorous levels low in hyperparathyroidism; in polyostotic fibrous dysplasia they are usually normal.

Hand-Schüller-Christian disease (lipoid granulomatosis) differs from this syndrome by the presence of high serum cholesterol levels in the former, the absence of skin pigmentation and sexual precocity, the lack

of osteosclerotic lesions, and the frequent occurrence of diabetes insipidus.

Neurofibromatosis with skin pigmentation may be differentiated from polyostotic fibrous dysplasia by a family history of the former, the frequent presence of fibromata on the skin, the paucity of the bone lesions (which are usually confined to certain regions), the lack of osteosclerosis, and the relatively smooth "coast-of-California" borders of the skin lesions.

Treatment

There is no specific treatment for this condition. Attempts have been made to accelerate the advent of puberty, which usually arrests the progression of the disease, and Finkler and Cohn[18] have reported a favorable result from the use of testosterone in one such case. However, the main therapeutic problem is that of correcting existing disabilities, which result most often from deformities of the lower extremities. These can frequently be dealt with successfully by orthopedic measures, both surgical and nonsurgical.

Summary

A case of Albright's syndrome with autopsy observations is reported, and the syndrome is discussed. This case was characterized by the typical bone lesions of polyostotic fibrous dysplasia, skin pigmentation, minor neurologic manifestations, and mental deficiency.

References

1. Albright, F., Butler, A. M., Hampton, A. O., and Smith, P.: Syndrome Characterized by Osteitis Fibrosa Disseminata, Areas of Pigmentation and Endocrine Dysfunction, with Precocious Puberty in Females, New England J. Med. 216:727-746 (Apr. 29) 1937.
2. Pritchard, J. E.: Fibrous Dysplasia of Bones, Am. J. M. Sc. 222:313-332 (Sept.) 1951.
2. Pritchard, J. E.: Fibrous Dysplasia of Bones, Am. J. M. Generalized Osteitis Fibrosa, Brit. J. Surg. 19:203-284 (Oct.) 1931.
4. Jaffe, H. L.: Hyperparathyroidism (Recklinghausen's Disease of Bone), Arch. Path. 16:63-112 (July); 236-258 (Aug.) 1933.
5. (a) Ivimey, M.: Bone Dystrophy with Characteristics of Leontiasis Ossea, Osteitis Deformans and Osteitis Fibrosa Cystica in a Child. A Suggestion as to the Influence of the Central Nervous System, Am. J. Dis. Child. 36:348-360 (Aug.) 1929. (b) Abeloff, A. J., Sobel, I. P., and Bernhard, A.: Extensive Decalcification of the Bones in an Eight Year Old Boy, Am. J. Dis. Child. 45:105-118 (Jan.) 1933. (c) Freedman, H. J., Disturbances of Function of the Suprarenal Glands in Children, Am. J. Dis. Child. 44: 1285-1292 (Dec.) 1932. (d) Gutman, A. B., Swenson, P. C., and Parsons, W. B.: The Differential Diagnosis of Hyperparathyroidism, J.A.M.A. 103:81-94 (July 14) 1934. (e) Snapper, I., and Parisel, C.: Xanthomatosis Generalisata Ossium, Quart. J. Med. 2:407-417 (July) 1933. (f) Freund, E., and Meffert, C. B.: On the Different Forms of Non-generalized Fibrous Osteodystrophy: the Localized, the Diffuse Monostotic, the Unilateral and the Monomelic Form, Surg., Gynec. & Obst. 62:541-561 (March) 1936. (g) McCune, D. J.: Osteitis Fibrosa Cystica: the Case of a Nine Year Old Girl Who Also Exhibits Precocious Puberty, Multiple Pigmentation of the Skin and Hyperthyroidism, Am. J. Dis. Child. 52:743-747 (Sept.) 1936.
6. Albright, F., Scoville, B., and Sulkowitch, H. W.: Syndrome Characterized by Osteitis Fibrosa Disseminata, Areas of Pigmentation, and a Gonadal Dysfunction; Further Observations Including the Report of Two More Cases, Endrocrinology 22:411-421 (April) 1938.
7. Lichtenstein, L.: Polyostic Fibrous Dysplasia, Arch. Surg. 36:874-898 (May) 1938.
8. Lichtenstein, L., and Jaffe, H. L.: Fibrous Dysplasia of Bone: A Condition Affecting One, Several or Many Bones, the Graver Cases of Which May Present Abnormal Pigmentation of the Skin, Premature Sexual Development, Hyperthyroidism or Still Other Extraskeletal Abnormalities, Arch. Path. 38:777-816 (June) 1942.
9. Schlumberger, H. G.: Fibrous Dysplasia of Single Bones (Monostotic Fibrous Dysplasia), Mil. Surgeon 99:504-527 (Nov.) 1946.
10. Hibbs, R. E., and Ruch, H. P.: Albright's Syndrome, Ann. Int. Med. 37:587-593 (Sept.) 1952.
11. Belaval, G. S., and Schneider, R. W.: Fibrous Dysplasia of Bone, Cleveland Clin. Quart. 21:158-168 (July) 1954.
12. Harriman, D. G. F., and Millar, J. H. D.: Fibrous Dysplasia of Bone with Skeletal Lipoid Granulomatosis, J. Bone & Joint Surg. 36-B:95-101 (Feb.) 1954.
13. Dockerty, M. B., Ghormley, R. K., Kennedy, R. L. J., and Pugh, D. G.: Albright's Syndrome (Polyostotic Fibrous Dysplasia with Cutaneous Pigmentation in Both Sexes and Gonadal Dysfunction in Females), Arch. Int. Med. 75: 357-375 (June) 1945.
14. Vails, J., Polak, M., and Schajowicz, F.: Fibrous Dysplasia of Bone, J. Bone & Joint Surg. 32-A:311-322 (April) 1950.
15. Albright, F., and Reifenstein, E. C., Jr.: The Parathyroid Gland and Metabolic Bone Disease, Baltimore, The Williams and Wilkins Co., 1948, pp. 263-283.
16. (a) Stauffer, H. M., Arbuckle, R. K., and Aegerter, E. E.: Polyostotic Fibrous Dysplasia with Cutaneous Pigmentation and Congenital Arteriovenous Aneurysms, J. Bone & Joint Surg. 23:323-334 (April) 1941. (b) Coleman, M.: Osteitis Fibrosa Disseminata; Report of a Case, Brit. J. Surg. 26:705-713 (April) 1939.
17. Thannhauser, S. J.: Neurofibromatosis (Von Recklinghausen) and Osteitis Fibrosa Cystica Localisata et Disseminata (Von Recklinghausen); A Study of a Common Pathogenesis of Both Diseases, Differentiation Between "Hyperparathyroidism with Generalized Decalcification and Fibrocytic Changes of Skeleton and Osteitis Fibrosa Cystica Disseminata," Medicine 23:105-148 (May) 1944.
18. Finkler, R. S., and Cohn, G. M.: Testosterone Therapy in a Case of Fibrous Dysplasia of Bone with Hypogenitalism, Arch. Pediat. 64:567-578 (Nov.) 1947.

Cardiovascular Disease—Data on Mortality, Prevalence and Control Activities, is a new publication of the Public Health Service, U. S. Department of Health, Education, and Welfare. Designed particularly for use by people working in the heart disease field, the booklet provides information on cardiovascular-renal disease mortality and prevalence, and on heart disease control activities.

In general, data are included which permit comparisons among various population groups, among states, or among geographic regions. Results of case-finding where various populations were examined and various screening techniques used are also shown.

The 68-page booklet, issued as Public Health Service Publication 429, contains 36 tables. It was prepared by the Heart Disease Control Program of the Division of Special Health Services, Bureau of State Services, and single copies are available from the Heart Program.

* * *

Tuberculosis is still a communicable disease; isolation in a tuberculosis hospital is an essential factor in tuberculosis control. There is need for hospitalization because many cases of tuberculosis have a positive sputum for many months even with intensive chemotherapy. There is need to evaluate each case on an individual basis, and this can best be done . . . in the hospital in consultation with the thoracic surgeon. There is need for hospitalization during that period when sensitivity of organisms and effectiveness of treatment are being tested. Paul S. Phelps, M.D., The John N. Wilson Memorial Lecture, April 30th, 1954.

FACTORS PRODUCING EGO DISINTEGRATION IN THE AGED

EWALD W. BUSSE, M.D.
ROBERT H. BARNES, M.D.
and
LOUIS D. COHEN, Ph.D.
DURHAM

Recent advances in medical science have so increased the life span as to give us a large number of aged who present problems of medical concern in a number of new situations. Among these problems is the breakdown in self-esteem and of ego strength. We should like to discuss here the nature of this breakdown and its medical implications. Our remarks are based in part on a continuing study of some 500 subjects over the age of 60*.

Definitions

Before we begin it may be helpful to reach agreement on a few words. The most obvious and deceptively simple idea is that of *old age*. Just when is a man old? Is aging a function of physiologic change and decay, or of physical atrophy, sclerosis, or some combination of organ degeneration? Or are these factors quite secondary to questions of psychologic efficiency and alertness in memory, orientation, and judgment? Is the question one of sociological aging, represented by changes in and reduction of responsibilities for the management of the home or the job? Or is it perhaps some global combination of these different aspects of an individual which gives him the status of an aged person? The concept of aging is difficult to clarify[1], but for our purposes, we shall arbitrarily consider the age of 60 as the beginning of the period of the aged and avoid for the moment the complex issues raised above.

Another term we shall use is *ego*, by which we mean the thought expressed by William James[2]—"The ego is the *I* looking at the *me*." What James was discussing was two different aspects of the self—the perceiver and the perceived. Thus ego has a number of different attributes. For James the "I" that does the perceiving can select, interpret, and order the world in such a way as to make the person comfortable and the world meaningful. This "I" has executive attributes: it exercises control; it orders and manages.

This is but one part of the concept of ego. The other part is the "me"—or the object perceived. The "me" represents the estimate that a person makes of his abilities. How able am I? What attributes do I have? Am I as clever—as strong—as well regarded as others? Do I meet the measure of people around me? The "me" is what the person sees when he regards himself.

Sources of Ego Strength

We believe that an important element in the social and emotional growth of a person is the way in which he regards himself. A healthy self-regard is built up over a period of years. Let us consider some of the factors which help build ego strength and a favorable self-regard.

Ordinarily heredity and physical well-being contribute enormously to the ego. Other sources of self-regard come from living habits—habits related to diet, nutrition, exercise, sleep, and cleanliness—all of which may tend to enhance the self-picture and round out the sense of well-being of the individual.

A third area contributory to the strength of the ego is the development of skill and efficient adjustment mechanisms for dealing with the problems of anxiety, guilt, and hostility. Those who fail to deal effectively with these problems are upset, tense, angry, frustrated, and often have a loss of self-esteem.

Still another area that contributes to a person's self-esteem concerns the satisfactions which come from living in a community, of being well regarded and well accepted. The stability of family relationships, the responsibilities of father to mother, of father and mother to children and other relatives, give clarity to the role of the person and give him a sense of belongingness and of importance. The stability of church and community relationships, the practice of having equal regard for the importance of the present and the meaning of the hereafter also provide a source of strength. As has been suggested by Mead[3], the acceptance of the hereafter in the Balinese provides such a source of strength that elderly

From the Department of Psychiatry, Duke University School of Medicine, Durham, North Carolina.
Read before the Section on Neurology and Psychiatry, Medical Society of the State of North Carolina, Pinehurst, May 4, 1955.

*This study has been made possible through the support of the National Institute of Mental Health, of the National Institutes of Health.

Balinese seek every opportunity to learn so they will be able to use their skills in the hereafter. Membership in community organizations, P.T.A., Rotary, the League of Women Voters, Golden Age societies, and the like tends to give people a sense of belongingness, of purpose, of contribution.

Thus heredity, living habits, psychologic skills, and social roles help people develop ego strength, facilitate their relationships to others, and provide such self-esteem as may give a sense of satisfaction and happiness.

Clinical Features of Ego Breakdown

Before considering the various factors leading to ego breakdown in the aged, a brief consideration of how such breakdowns appear clinically is appropriate. Statistically, *depressive reactions* are among the most frequent psychiatric disorders seen in the elderly. Most commonly the person recovers spontaneously without recourse to medical care, although occasionally he finds his way into the hospital, where his years often cause him to be falsely labeled as senile. The dynamic factors producing depressions in the elderly appear to be largely unrelated to either guilt or inwardly turned hostility, but seem an outgrowth of the person's perception of changes in his social and physical status, changes which threaten his self-regard[4].

The second most commonly encountered major psychiatric disorder is that covered by the general diagnostic term *senile dementia*. This can be viewed as an example of ego breakdown in which organic changes in the central nervous system may be important; but, as Rothschild[5] and others have pointed out, there is no consistent relationship between the clinical picture and the postmortem findings. It should be noted, too, that more careful diagnostic work reveals that some of the disorders affecting hospitalized elderly people fall more properly into the category of *schizophrenic reactions* than into the senile dementia group. The existence of clinical episodes of schizophrenic reactions in the older age group have generally been ignored.

In addition to these more clearly defined types of breakdown, we see varying degrees of disturbed behavior in the elderly which have often been grouped under the heading, "adjustment reaction of later life." The elderly person may become argumentative, hostile, withdrawn, suspicious, without being considered mentally ill. Adjustment problems of this sort, however, also represent clinical examples of partial breakdown in ego functioning.

Factors Influencing Ego Breakdown

Factors which lead to the breakdown of ego in old age represent in many ways the antitheses of the sources of ego strength which have already been reviewed. Kallman's studies[6] support the thesis that a relationship exists between genetic factors and the type of ego breakdown seen during what he refers to as the involutional period. We all recognize, in our daily clinical experience, the existence of genetic factors as they relate to tissue aging in people of various families.

Intimate contact with the adjustment problems of elderly people very soon impresses one with the importance of the individual's mechanisms for coping with anxieties, guilts, hostilities — the mechanisms developed for dealing with *feelings*, both about one's self and about others. Adjustment techniques which fail to produce gratifying experiences and heightened self-esteem in earlier life become progressively more ineffectual, and the individual is largely defenseless against the major stresses of old age. He may then place increased reliance on memories and fantasies for his gratification, and live in the past[7]. The person with such defects is thus most vulnerable to the loss of external supports which come with age—loss of friends, relatives, jobs—and is defenseless against the threats of loneliness. The following case illustrates this quite graphically:

Case 1

The patient is a 65 year old white spinster who was first admitted to the hospital on the medical service because of a tearful, agitated behavior and the accentuation of a severe facial spasm. This spasm had first been noted six years ago, and its development coincided with a move to live with her sister and family. Initially it had consisted of a tic-like involvement of the right eye only, but particularly during the two weeks prior to admission it had spread to the entire right side of the face in an almost continual spasm. Two weeks before admission the patient had offered her only significant material possession—a small house she had inherited—to her beloved niece. This offer had been prompted by the niece's bitter complaints over her present living standards, made worse by the recent

arrival of a new child. For various reasons the niece was extremely upset by the offer of the house and rebuffed the patient with the remark, "No, I don't want it! I want to get away from here! You're always trying to push, push, *push* ! ! ! " The niece accentuated this by stomping loudly on an overturned dish-pan until it was ruined. The old lady retreated, but at 5 a.m. the following day, she awakened the niece to tell her that something was wrong with the baby, that it was crying. Such was found not to be the case. Progressively following this, the patient developed strong guilt feelings and believed she had injured her niece and her family. She became more confused and felt that the police were coming to take her away.

The patient had grown up on the farm as the next to the youngest of five siblings. Her social adjustment was not good, and she remained at home to take care of her aged parents, to whom she was very closely attached. She never dated, and as the years progressed she became more dependent on the family group. After her parents died she lived for some years with a lady-friend, but this friendship broke up and she moved into the relatively unsatisfactory environment of her sister's crowded home. Here the patient was constantly frightened by loud bickering and physical fighting between the family members. In this setting she developed the close attachment to the young niece whose rebuffs apparently were of real importance in the precipitation of this woman's psychotic episode.

In the hospital the patient retreated into a fantasy world of magic gestures and childish, regressive, acting-out behavior. Following a therapeutic regimen, which included intensive psychotherapy and electro-shock therapy, she became able to function for several months outside the hospital in a very withdrawn, paranoid state. Even this level of adjustment broke down and the patient had to be committed to long-term care in the State Hospital.

This case illustrates clearly how susceptible the ego is to breakdown when the mechanisms used to deal with problems of interpersonal relationships are poorly developed. It demonstrates the impact of loss of external supports with subsequently disasterous results. But even in the person with relatively effective adjustment patterns, the threats to self-esteem from loss of friends, relatives, social status, earning power, and the like are major problems for the ego to cope with, and when added to other stress can lead to ego breakdown.

Other stress includes such things as the usual physical, bodily changes associated with aging—loss of physical beauty and attractiveness and motor efficiency. The difficulties in accepting such usual changes in the body image constitute one of the major stresses on the ego[8]. If the more specific, and yet very usual, physical illnesses of old age are added, the stress becomes even greater. Such illnesses as prostatism strike close to the core of many a man's self-esteem, and arthritis often removes what remains of his diminishing motility. To this list could be added the genital and breast tumors of the elderly female, the deforming skin cancers, the broken hips, the failing hearts, and the like, each necessitating major changes in the body image, in what the *"I"* sees when it views the *"me."*

On occasions the ability of the brain to function in a neurophysiologic sense is impaired. This impairment may be the result of a direct assault as a cerebrovascular thrombosis or hemorrhage, or of the more subtle one of failing circulation. The interrelation of these factors with the loss of external supports is well illustrated in the following case:

Case 2

The patient is a 72 year old retired farmer whose wife died three months prior to his hospital admission. He had never had serious problems with alcohol, but at this point he became very depressed and began to drink heavily. He discontinued the digitalis he had been taking for a number of years. Because of increasing confusion, he was brought to the hospital, where he was found to be disoriented as to time and place, with gross defects in both recent and remote memory. Speech was thickened, and physical examination revealed marked cardiomegaly, with pulmonary and peripheral edema. He was digitalized, given mercurial diuretics, and placed on a salt-free diet. His congestive failure disappeared rapidly and his mental state cleared, leaving few significant residuals. Follow-up over a two-year period revealed a reasonably satisfactory adjustment in the community.

Unfortunately, physical damage to the brain itself is seldom this easily reversed, and the features of ego breakdown at this level are readily seen. The ego is quite unable to evaluate effectively either the *"me"* or the outside world. Autistic logic and denial, strongly clouded by unconscious factors, replace reality testing, and the individual is left largely defenseless[9].

One further stress affecting the ego of the aged needs consideration. To what extent does the imminence of death and the fear of it constitute a disorganizing force? Our own studies of this factor in elderly people are not final. The average elderly subject rather consistantly denies that he fears death itself. It is as though death represents a far-off abstraction—not something real, concrete, to be experienced. This may well be the result of life-long avoidance and repression of a frightening unknown. This is the way it appeared to Cicero: "To disregard death is a lesson which must be studied from our youth up; for unless that is learnt, no one can have a quiet mind."[10] Eissler[11], in his new book on the dying

patient, agrees with Freud that the basic fear is not of death itself, as an event, but of injury and mutilation. Our own experience is largely in agreement with this concept and indicates that the elderly person is more concerned about *how* he is to die than *when* or *if*. Thus the fears of terminal pain, disfigurement, dying alone, unattended, are more pressing and pertinent threats than death itself. We are all clinically aware of the disorganizing effects of chronic pain in the elderly cancer patient, for example. These fears, then, can constitute a major factor in the production of ego breakdown in the elderly.

Conclusion

The concept of the ego, a consideration of how it functions, and its sources of strength constitute a helpful frame of reference for considering adjustment in old age. Likewise a consideration of the forces which may lead to a disintegration of ego function is a useful approach to the understanding of adjustment failures and breakdown in the elderly. Further knowledge of the causes of such ego breakdown, and utilization of what we now know, can lead to both more effective mental hygiene planning for old age, and more rewarding management of those already disturbed. It becomes quite evident that it is impossible to understand adjustment failures of the elderly person without considering all the forces which are brought to bear upon him.

References

1. Caven, R., Burgess, E., Havighurst, R., and Goldhammer, H.: Personal Adjustment in Old Age, Chicago, Science Research Associates, Inc., 1949.
2. Mead, M.: Memorandum NIMH, Social Panel Meeting, March 28, 1952, p. 87.
3. Busse, E., and others: The Strength and Weakness of Psychic Functioning in the Aged, Read at the American Psychiatric Association, Annual Meeting, St. Louis, Missouri, May, 1954.
4. James, W.: Principles of Psychology, New York, Holt and Co., 1890.
5. Rothschild, D.: Pathological Changes in Senile Psychosis and Their Psychobiologic Significance, Am. J. Psychiat. 93:757-788 (Jan.) 1937.
6. Kallman, F.: Genetic Aspects of Psychoses, chap. 19, from The Biology of Mental Health and Disease, New York, Hoeber-Harper, Inc., 1952.
7. Havighurst, R., and Albrecht, R.: Older People, New York, Lonsmans Green and Co., 1953.
8. Schilder, P.: Psychiatric Aspects of Old Age and Aging, Am. J. Orthopsychiat. 10:62-72 (Jan.) 1940.
9. Thayler, M. B.: The Application of Three Theories of Personality to the Rorschach Records of 75 Aged Subjects, Ph.D. Thesis, University of Denver, August, 1952.
10. Cicero, quoted by Johnson, W. M.: The Years After 50, New York, Whittlesey House, 1947.
11. Elssler, K. R.: The Psychiatrist and the Dying Patient, International University Press, Inc., 1955.

Abstract of Discussion

Dr. Lloyd Thompson (Winston-Salem): The writers have given us a very clear picture of what goes into building ego strength as well as what happens to wear down this strength, especially as age advances. Of course, ego breakdown can begin long before the age of 60. To me it seems helpful, and even optimistic, to think in terms of ego function rather than arteriosclerosis and brain cell atrophy. This approach is in contrast with the older attitude that medical treatment consists of treating a disease after it has occurred. This problem is a challenge to the general practitioner, the social worker, the nurse, and the community organizations that have to do with the aging process.

Let me emphasize that our Western culture fosters a rather dismal outlook for middle-aged folk as they approach old age. This is an external factor and is in contrast with the Balinese philosophy referred to in this paper.

There is little doubt concerning the need for an educational program to train people for adjustment to old age. This program should have the broad aim of anticipating and preventing the anxieties and maladjustments attendant on growing old. To me, it appears logical that any such effort should not be postponed until middle life or the age of 60, but should be a continuing health project from the time of conception onward.

The way in which a person meets and experiences the onslaught on his ego and the other stresses in old age and middle life depends not so much upon pathologic and normal physiologic changes as upon the shaping of the personality in the earlier years by the family, the community, and the general culture.

The development of social and emotional maturity, which implies a good balance among the id, the ego, and the superego and which should insure full enjoyment of the most in old age, really starts at the beginning of life.

Dr. Robert Strobos (Winston-Salem): I was struck by the statement that older people are less preoccupied with death as an entity than with the concept of self-mutilation that is involved; that the patient is more concerned with what will happen to his body than with the fact that he would die. I wonder if that could be confirmed by the Rorschach studies; if those studies were performed, would the self image or the death image be predominant.

Dr. Busse: I would like to ask psychiatrists how much can we help our patients. As I see our society, if middle-aged people perform well professionally and fulfill their obligations to their families, children, and so forth, we give them prestige. Unfortunately, since these are the major mechanisms for maintaining belief in themselves, they are doomed to failure. Before long the family moves out and there is a shift in professional function, and, unless the elderly person has other socially accepted devices for maintaining his self esteem, his position becomes difficult. I have heard a number of well adjusted people in our study say: "When I was young, people called me foolish for having interests outside the family." And yet, these interests have actually carried them through old age. As psychiatrists, I think that we can encourage our patients to develop these capacities before they become too old.

In the Rorschach tests, a large percentage of people give responses which indicate concern with slowing-down processes; it is less evident that they are preoccupied with death, *per se*. They are concerned with the changes of age rather than with reaching a total end. Most people make this quite clear. They say openly: "I am not afraid of being dead. What I'm afraid of is, who will take care of me when I am sick. How will I be protected against pain? If I could be assured that I would die with-

out pain, I wouldn't be afraid. "This attitude is prevalent in our society. Most people say, "If I have to die somewhere, I had just as soon die in a plane crash."

Dr. Strobos: I am surprised that the fear of death itself hasn't shown up more clearly. It seems to me to be a basic fear of all people.

From the floor: I think that fear of death is a phobia, a relic of medieval times. I don't think it is as prevalent today. At least it is not expressed.

Dr. Barnes (closing): I agree with Dr. Thompson's remarks. The question is when to start studying people. We have by no means decided this point. One of our next moves should be to begin one decade younger. Even this doesn't answer all the problems, however.

I am reminded of the story of Oliver Wendell Holmes and Chauncey Depew walking home together. Holmes was approximately 97. A good-looking girl came down the street. Holmes turned around, watched her a good ways, and then remarked to Depew, "Oh, to be 70 again!"

DIPHTHERIA—A CONTINUING NORTH CAROLINA HEALTH PROBLEM IN 1954

JACOB KOOMEN, JR., M.D.*
and
CHARLES M. CAMERON, JR., M.D., M.P.H.†
RALEIGH

The persistence of a high incidence of diphtheria in North Carolina has been a matter of concern to practicing physicians and public health workers for many years. While the number of cases had been decreasing more or less steadily for a decade, a dramatic increase in 1945 focused attention upon the disease. During that year the case rate increased in North Carolina by 127 per cent, as compared with an increase of only 32 per cent for the United States as a whole. Of 637 patients studied by Stevick[1] at that time, 63.9 per cent had received no immunization to the disease, and another 20 per cent had had but one dose of antigen. He stressed the need for an effective immunization program in North Carolina.

A study of diphtheria carried out in 1953 revealed that while North Carolina's case rate had fallen to a new low point (3.1 cases per 100,000 population)[2], it was, nevertheless, twice that of the nation as a whole. It is worth noting that in 1945 the North Carolina rate was three times the national average, while in 1952 it was two and one half times higher.

Table 1
Reported Diphtheria Case and Death Rates in North Carolina

Year	No. cases	No. deaths	Cases per 100,000 population	Deaths per 100,000 population	Case fatality ratio (Per Cent)
1935	1,720	162	50.9	4.8	9.4
1936	2,347	188	69.0	5.6	8.0
1937	2,056	160	59.9	4.8	8.0
1938	2,442	168	70.3	4.9	6.9
1939	2,368	164	67.0	4.8	6.9
1940	1,125	107	31.5	3.0	9.5
1941	1,629	83	44.4	2.3	5.1
1942	1,187	76	32.4	2.0	6.4
1943	801	53	21.7	1.4	8.6
1944	665	40	18.5	1.0	6.0
1945	1,475	96	42.0	2.5	6.5
1946	590	46	16.2	1.3	7.8
1947	751	32	20.2	.86	4.3
1948	506	30	13.3	.79	5.9
1949	550	25	14.2	.65	4.5
1950	499	27	12.3	.67	5.4
1951	373	18	9.0	.45	4.7
1952	202	9	4.8	.22	4.5
1953	129	6	3.1	.14	4.6
1954	125	8	2.9	.19	6.4

In an effort to determine the responsible factors, the present study was initiated by the Division of Epidemiology of the North Carolina State Board of Health. This paper presents data obtained from an epidemiologic investigation of all cases of diphtheria reported as having onset in 1954.

Method of Study

Following receipt of official notification of the diagnosis, a questionnaire was mailed to the local health officer requesting information relative to (1) laboratory studies carried out in each case; (2) immunization, including the date; (3) the dates of booster doses of antigen, if given; (4) the source of infection, if known, and (5) the numbers and names of secondary cases. These data, obtained from health department records, private physicians, hospitals, and patients' records, represent information on each of the 125 reported cases.

Case and Death Rates

Data relative to case and death rates for diphtheria in North Carolina in the period 1935–1954 are presented in table 1. The number of cases in 1954 is the lowest yet recorded. The case rate, 2.9 cases per 100,-

*A field epidemiologist assigned to the Division of Epidemiology, North Carolina State Board of Health, Raleigh, North Carolina, by the Communicable Disease Center, Public Health Service, U. S. Department of Health, Education and Welfare, Atlanta, Georgia.

†Chief of the Communicable Disease Control Section, Division of Epidemiology, North Carolina State Board of Health. Present address: Chapel Hill.

Table 2
Case Rates Per 100,000 Population North Carolina, South Atlantic States, and the United States 1949-1953

Year	Rates per 100,000 population		
	North Carolina	South Atlantic States	United States
1949	14.2	9.5	5.4
1950	12.3	7.5	3.9
1951	9.0	5.4	2.6
1952	4.8	4.4	1.9
1953	3.1	3.7	1.5

North Carolina data from Statistics Section, North Carolina State Board of Health
Other rates from Communicable Disease Center

000 population, is also the lowest recorded.

Eight deaths attributable to diphtheria were reported during the year. Only once, in 1953, when 6 were recorded, have fewer deaths been attributed to this cause. The death rate is calculated as 0.19 per 100,000 population—the second lowest so far recorded.

Although no striking changes have been apparent, there has been a somewhat irregular decline in the ratio of diphtherial mortality to cases in the past 20 years. The highest percentage recorded in this period was 9.5 per cent, in 1940, and the lowest, 4.3, in 1946. The data for 1954 show that 6.4 per cent of the cases ended fatally, a slightly higher percentage than that recorded in the past several years.

Table 2 shows the case rates for North Carolina, the South Atlantic States, and the United States for the past five years. In 1953, the last year for which complete data are available, the case rate for the state was 3.1 per 100,000, for the South Atlantic States, 3.7, and for the United States, 1.5. The 1953 case rate in North Carolina is seen to be lower than the average case rate for the South Atlantic States for the first time in the five-year period presented.

Geographic and Seasonal Distribution

The number of cases in each of the eight counties reporting the largest number of cases per county are given in table 3. While diphtheria was reported in 41 of North Carolina's 100 counties, one third (34.4 per cent) of the total cases in the state were recorded by two counties, Henderson and Lenoir, listing 23 and 20 cases, respectively. The eight counties listed reported 59.2 per cent of the recognized cases, indicating that diphtheria continues to be a localized health problem[2]. Case rates of 69.8, 42.6 and 31.3 per 100,000 population were calculated for Henderson, Lenoir, and Transylvania counties, in the order given. Of the eight counties reporting the largest number of cases in 1954, five were among the eight counties reporting the largest number of cases in 1953.

Table 3
Number of Reported Cases and Case Rates of Eight Counties Reporting Largest Number of Cases

County	No. Cases	Rate per 100,000 population
Henderson	23	69.8
Lenoir	20	42.6
Gaston	8	6.6
Wayne	6	8.9
Transylvania	5	31.3
Edgecombe	4	7.6
Martin	4	13.9
Pitt	4	6.2

The seasonal distribution of the 125 cases is seen in table 4. April led with 20 cases; only 2 cases each were reported in July and November. The average number of cases reported per month was 10.

Table 4
Reported Incidence by Months

Month	Cases
January	8
February	13
March	19
April	20
May	7
June	3
July	2
August	5
September	17
October	15
November	2
December	14
Total	**125**

Age, Sex, and Race Distribution

Table 5 shows the distribution of cases by age and race. Eighty of the patients were white, a color specific case rate of 2.5; and 45 were non-white, a color specific case rate of 4.0 per 100,000 population.

Distribution of cases among whites and non-whites in the age groups from birth through 9 years was equal. It can be seen that 38.4 per cent of the total patients were less than 5 years of age, and that 60.8 per cent had not yet reached the age of 10 years. In the white group, however, 30 per cent of the patients were 4 years of age or less and 47.5 per cent were 9 years of age or

Table 5
Case Distribution by Age and Color
1954

Age (Years)	White	Non-white	Total
Under 1	3	3	6
1-4	21	21	42
5-9	14	14	28
10-14	10	2	12
15-19	5	1	6
20-24	3	1	4
25-29	8	0	8
30-39	9	3	12
40-49	4	0	4
50-59	2	0	2
60-69	1	0	1
Totals	**80**	**45**	**125**
Percentages	**64.0**	**36.0**	**100.0**

Table 6
Case Distribution by Age and Sex
1954

Age (Years)	Male	Female	Total
Under 1	3	3	6
1-4	21	21	42
5-9	17	11	28
10-14	4	8	12
15-19	5	1	6
20-24	3	1	4
25-29	4	4	8
30-39	3	9	12
40-49	0	4	4
50-59	1	1	2
60-69	0	1	1
Totals	**61**	**64**	**125**
Percentages	**48.5**	**51.5**	**100.0**

less, while in the non-white group 53.4 per cent were 4 years of age or less and 84.5 per cent were less than 10 years of age. A disparity between the two groups is also seen in the patients beyond 20 years of age. This group includes 30 patients, 27 of whom were white and 3 non-white. In the past 20 years several states have shown an increasing proportion of cases in the group beyond 20 years of age, according to Dauer[3].

Table 6 shows that the distribution between the sexes is approximately equal. No consistent differences are seen between the two sexes until the older age groups are examined. In contrast with the small number of males (4) in the group beyond 30 years of age is the relatively large number of females[15].

Distribution of Diphtheria Deaths by Age and Race

Table 7 shows the distribution by age and race of 8 patients dying of diphtheria. The three non-white children were 4 years of age or less; the 5 white children ranged from 1 to 9 years of age. Six were boys; two were girls.

Table 7
Distribution of Deaths by Age and Color

Age (Years)	White	Non-white	Total
Less than 1	0	1	1
1-4	3	2	5
5-9	2	0	2
Totals	**5**	**3**	**8**

Laboratory Studies

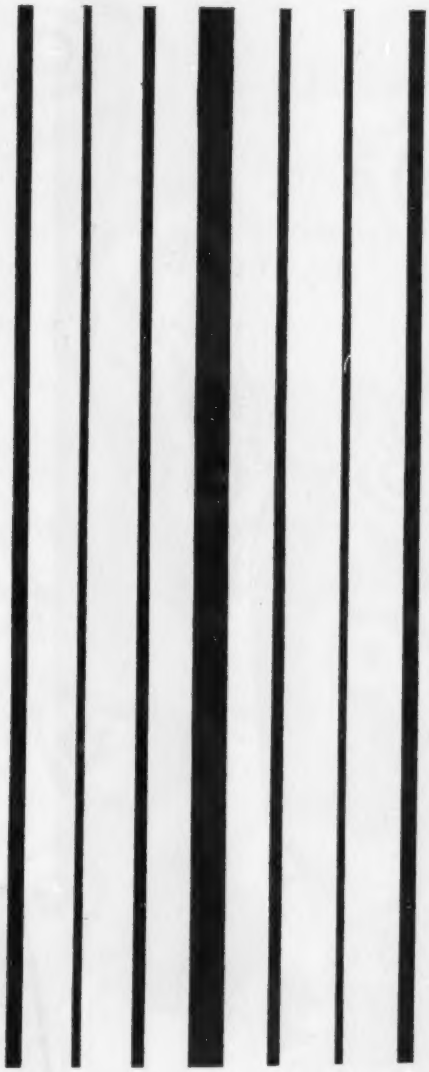
In 109, or 87.2 per cent, of the 125 reported cases an effort was known to have been made to support the clinical diagnosis with laboratory proof, as shown in table 8.

Positive laboratory evidence was found in 100 of the 109 cases examined, as revealed in table 9. Eighty per cent of the total clinical diagnoses were substantiated by laboratory findings. In 24 of the 100 proved cases, laboratory diagnosis was based solely upon evidence obtained from direct microscopic examination of a smear or smears taken from the infected area. The interpretation of the findings in such smears may be extremely difficult.

The shortcomings of this method of diagnosis have been amply cited by Mueller[4].

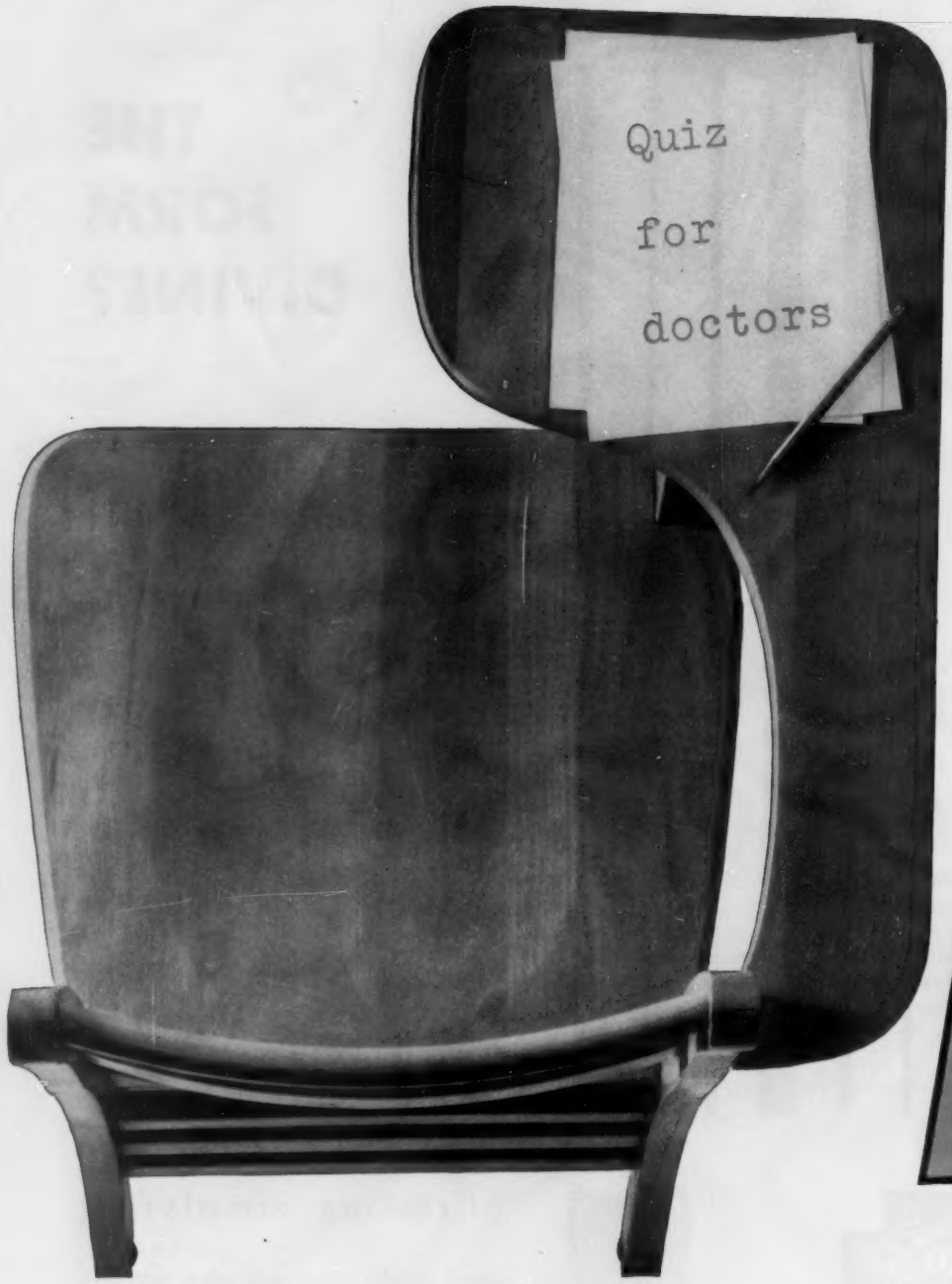
Table 8
Laboratory Studies of 125 Reported Cases

Laboratory	Methods	Cases	Per cent of total
Local laboratory	Smear only	24	19.2
Local laboratory	Culture only	18	14.4
Local laboratory	Smear and culture	26	20.8
State Laboratory of Hygiene	Culture	37	29.6
Out-of-state laboratory	Smear and culture	4	3.2
No laboratory studies performed		14	11.2
Unknown		2	1.6
	Totals	**125**	**100.0**



THE FORM DIVINE?

No doctor likes to complete forms; they are troublesome even if his secretary or nurse suffers with them. Hospital Saving Association doesn't merely sympathize. Its staffmen are constantly engaged in the big task of testing, simplyfing and redesigning the forms you use.



AC

(you probably know every answer!)

Q. Which is today's most widely prescribed broad-spectrum antibiotic?

A. ACHROMYCIN — it's first by many thousands of prescriptions.

Q. What are some of the advantages of ACHROMYCIN?

A. Wide spectrum of effectiveness.
Rapid diffusion and penetration.
Negligible side effects.

Q. Exactly how broad is the spectrum of ACHROMYCIN?

A. It has proved effective against a wide variety of infections, caused by Gram-positive and Gram-negative bacteria, rickettsia, and certain viruses and protozoa.

Q. In what way are ACHROMYCIN Capsules advantageous?

A. For rapid and complete absorption they are dry-filled, sealed capsules (a Lederle exclusive!) No oils, no paste...tamperproof.

Q. Who makes ACHROMYCIN?

A. It is produced — every gram — under rigid quality control in Lederle's own laboratories and is available only under the Lederle label.

HROMYCIN*

Hydrochloride
Tetracycline HCl Lederle

Lederle

LEDERLE LABORATORIES DIVISION AMERICAN Cyanamid COMPANY PEARL RIVER, NEW YORK

*REG. U.S. PAT. OFF.

TO MEMBERS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

As close as your phone . . .

TELEPHONE COLLECT
5-5341 — DURHAM

If you have any problems in connection with disability insurance we invite you to call this office—collect. We'll do our best to help you — and there's no obligation on your part.

THIS IS THE ACCIDENT AND HEALTH PLAN ESTABLISHED BY THE STATE SOCIETY FOR ITS MEMBERS IN 1940

PLANS AVAILABLE

Accidental Death	*Dismemberment Benefits, Up to*	*Accidental and Sickness Benefits*	*Annual Premium*	*Semi-Annual Premium*
$5,000.00	$10,000.00	$ 50.00 weekly	$ 90.00	$45.50
5,000.00	15,000.00	75.00 weekly	131.00	66.00
5,000.00	20,000.00	100.00 weekly ($433.00 per month)	172.00	86.50

Members under age 60 may apply for $10.00 per day extra for hospitalization at premium of only $20.00 annually, or $10.00 semi-annually.

FOR APPLICATION, OR FURTHER INFORMATION, WRITE OR CALL

J. L. CRUMPTON, State Mgr.

Professional Group Disability Division

Box 147, Durham, N. C.

Representing—COMMERCIAL INSURANCE COMPANY OF NEWARK, N. J.

Table 9
Results of 109 Laboratory Cases Studied by Laboratory

Laboratory	Methods	No. cases	No. positive reports
Local laboratory	Smear only	24	24
Local laboratory	Culture only	18	18
Local laboratory	Smear and culture	26	25
State Laboratory of Hygiene	Culture	37	29
Out-of-state laboratory	Smear and culture	4	4
	Totals	**109**	**100**
Percentage of total cases reported by laboratory as positive			80.0
Percentage of total cases reported by laboratory as positive on culture			60.8

Smears doubtfully positive are often interpreted as positive because it is safer to give treatment when not clearly indicated than to withhold it if the need possibly exists. Using the isolation and identification of the causative agent, *Corynebacterium diphtheriae*, as the index of laboratory proof, 76, or 60.8 per cent, of the 125 clinical diagnoses were confirmed. Twenty-nine positive isolations in cases of suspected diphtheria were made at the North Carolina State Laboratory of Hygiene.

Immunization

Table 10 presents the diphtheria immunization histories of 118 out of 125 patients on whom complete data were available. Seventy-two, or 61 per cent, were known to have received no immunization against this disease. It is noteworthy that this percentage is very close to the 63.9 per cent found to have received no immunization in the series of patients examined by Stevick in 1945[1]. Thirty-nine per cent of the patients received one or more doses of an appropriate diphtheria antigen. Only 16 patients, or 13.8 per cent, had received booster doses of toxoid.

A comparative analysis of white and non-white patients given in tables 11 and 12 shows a striking difference in the percentage of each known to have received one or more immunizing doses; 50.2 per cent of the white patients and 20 per cent of the non-white patients for whom data were available had received some immunization. Twelve of the 80 white patients and 4 non-white patients had been given booster immunization.

A brief examination of the immunization records of the 8 patients who died shows, in table 13, that only one had received complete immunization to diphtheria; 1 had received a partial course, and 6 had received no immunization. The 2 patients receiving diphtheria toxoid had been immunized in

Table 10
Immunization Records of 125 Cases

Immunization record	No. cases	Per cent of total
No history of immunization	72	57.6
One dose of toxoid	3	2.4
Complete basic immunization	43	34.4
Unknown	7	5.6
Totals	**125**	**100.0**

Table 11
Immunization Records of 80 White Patients

Immunization record	No. cases	Per cent of cases
No history of immunization	36	45.0
One dose of toxiod	2	2.5
Complete basic immunization	35	43.7
Unknown	7	8.8
Totals	**80**	**100.0**

Table 12
Immunization Records of 45 Non-white Diphtheria Patients

Immunization record	No. cases	Per cent of total
No history of immunization	36	80.2
One dose of toxoid	1	2.2
Complete basic immunization	8	17.8
Totals	**45**	**100.0**

Table 13
Immunization Records of 8 Patients Dying of Diphtheria

No immunization	6
Partial basic immunization	1*
Complete basic immunization	1†
Booster immunization	0

*This patient, a 6 year old monogoloid, received two 0.5 cc. doses of toxoid in 1948.
†The patient, a 4 year old child, was immunized in 1950.

the first few months of life; neither had subsequently been given a booster dose of diphtheria antigen.

Relationship of Cases to Other Cases and Carriers

Although the number of cases of the disease in adult white women was relatively high, not one of these cases was secondary to a recognized diphtheria case in the same household.

Two three-case family outbreaks of diphtheria were seen. In each instance one member of the family served as the primary case, and the second and third cases were secondary to it.

Six two-case family outbreaks occurred. In one of these families the second case was obviously related secondarily to a case in the family; in the remaining five instances the familial cases occurred more or less simultaneously.

Six cases were shown to have had contact with individuals subsequently proved to have been carriers of *C. diphtheriae*. In 114 instances the source of infection was not determined.

Summary and Conclusions

North Carolina in 1954 had the lowest incidence of diphtheria yet recorded, but it is still above the average for the United States.

Eight counties recorded almost 60 per cent of the reported cases. Fifty-nine counties did not report a single case.

The case rate in the non-white population was approximately one and one half times that of the white population.

Of the entire group, more than one half of the patients were less than 10 years of age. Of the non-white group, approximately 85 per cent were less than 10 years of age. One third of the white patients were more than 20 years of age. In patients above the age of 29 years, females outnumbered males 4 to 1.

All deaths reported from diphtheria were in children less than 10 years of age. Six of the 8 were less than 5 years of age.

The clinical diagnosis was supported by some type of laboratory evidence in four fifths of the reported cases. Positive cultures were obtained from 60.8 per cent.

The failure to obtain basic and follow-up immunization, especially among the non-white population, plays a major role in the maintenance of the high diphtheria case rate.

Excellent laboratory facilities are within easy reach of all physicians practicing in North Carolina. Greater emphasis must be placed on the necessity for proper bacteriologic study of all suspected cases of diphtheria.

Acknowledgement

The authors wish to thank the local health officers, local health department staffs, practicing physicians of North Carolina, and personnel of the North Carolina State Laboratory of Hygiene, for their cooperation in making this study possible.

References

1. Stevick, C. P.: The Increase in Diphtheria Incidence in 1945. North Carolina M. J. 7:540-544 (Oct.) 1946.
2. Cameron, C. M., Jr.: Diphtheria—A Localized Health Problem in North Carolina. Health Bull. North Carolina State Board of Health 69:5 (May) 1954.
3. Dauer, C. C.: Trends in Age Distribution of Diphtheria in the United States, Pub. Health Rep. 65:1209-1218 (Sept. 22) 1950.
4. Mueller, J. H.: Bacterial and Mycotic Infections of Man. ed. 2, Philadelphia, Pennsylvania, L. B. Lippincott Company, 1952, p. 228.

Consideration should be given to the choice and use of nurses. Certain physicians have a bad reputation among nurses, usually for attaching blame to them when it is undeserved. Either the physician is so vague in giving orders that whatever the nurse does turns out to be wrong or he is so rigid in his requirements that the nurse is afraid to adapt the orders to the real situation. Every physician should regard the nurse as a member of an allied profession that has its own standards of conduct and procedure beyond which she cannot be expected to go. . . . Because of her watchfulness the nurse's judgment about alarming or unusual symptoms can be of great help to the physician, and her warning in their incipiency often saves him from the embarrassment of overlooking serious complications. A doctor who closes his ears to such suggestions or brushes them off impatiently is not making full use of his resources. The skillful physician learns to evaluate the individual capacities of his nurses and apply principles of personnel management to the placement, especially for private duty, of certain nurses in certain types of cases or in certain personality problems among his patients. No medicine or regimen of treatment can approach in effectiveness the proper choice of the right nurse for the particular patient. And nothing can so ensure the continuity of effective relations as expressions of appreciation of the nurse when her work deserves them. By the same token, she should not be reprimanded in the patient's presence any more than one would reprimand another physician in the same circumstances. Good care of the patient requires the confidence that only mutual courtesy can provide.—Howe, H. F.: The Use of Community Resources, New England J. Med. 250:368 (March 4)

pound of atropine will provide sufficient doses to treat one million people.

THE MANAGEMENT OF CONGESTIVE HEART FAILURE

FRANK P. WARD, M.D.
LUMBERTON

The management of congestive heart failure is one of the most interesting therapeutic problems with which the physician is faced. Each case presents its own diagnostic and therapeutic problems, no two cases are exactly alike; and often successful treatment calls for entirely different management from that followed in preceding cases. Admittedly, congestive heart failure in the ordinary sense of the word is not curable. At the same time a great deal can be done to prolong life, give relief, and lengthen the productive years of an individual so affected.

It is not the purpose or scope of this paper to discuss the etiology of congestive heart failure, but it is realized that no successful management can be undertaken without recognizing that numerous etiologic agents can be, and often are, responsible for the production of the condition.

The management of congestive heart failure, although varying to some extent from case to case, requires certain basic therapeutic procedures. The treatment may be divided into the four following phases:

1. Initial therapy
2. Long term therapy
3. Treatment of acute pulmonary edema
4. Complications of therapy.

Initial Therapy

Oral digitalis is the most valuable single drug. It has been said that the more skillfully digitalis is used, the less need there will be for any additional drug. This is very often the case. First used by Withering in the eighteenth century and rediscovered by MacKenzie in modern times, it stands eminently as the drug of choice in most cases of congestive failure. Now available in a wide number of acceptable glucosides, it offers the physician a wide range of choice. In my own practice I have most often used digitoxin, beginning with 0.15 mg. three times daily and continuing this regimen usually from three to five days or until early toxic symptoms or evidence of improved cardiac function are present. It is well to remember the original advice given by Withering: "Let it be continued until it acts on the kidneys, the stomach, the pulse, or the bowels."

Mercurial diuresis is an excellent adjunct even in the initiation of therapy, particularly in the patient with marked edema. Given in 40 to 80 mg. doses, the mercurials are now available in a wide variety of safe preparations for subcutaneous or intramuscular injection, without the hazard of intravenous administration. Acting on the tubular epithelium, they block the reabsorption of the chloride ion, the sodium ion and, consequently, of water. In the normal kidney they are eliminated from the tubular epithelium in a period of 24 to 48 hours. In the beginning, a dose of 40 to 80 mg. given every other day until the patient is free of edema is ordinarily a safe, effective schedule.

Sodium restriction certainly should be insisted upon at the initiation of therapy, although one must be aware of the occasional difficulty resulting from too vigorous mercurial diuresis and too marked sodium restriction. From a practical standpoint many patients will not restrict their intake of sodium, and the physician thus becomes more dependent on diuretics and other measures.

Rest in some form is usually a must in the initiation of treatment of the patient with congestive failure. Unless some acute vascular episode has occurred, it is seldom desirable to keep the patient strictly in bed even during the early phases of therapy. In fact, Levine has shown that "arm chair" rest may at times actually reduce the work load on the heart. Certainly the control of dyspnea is less a problem in the semi-recumbent position than in the horizontal position.

Sedation is frequently necessary and almost always desirable in the early stages of management. The practicing physician knows that without sedation many of these hard-driving, obese, hypertensive patients who are suddenly forced to rest are indeed miserable creatures. Small amounts of barbiturates are usually adequate. In more severe congestive failure with marked dyspnea and anxiety, however, morphine for a few nights still gives results that are superior to those of any other drug.

Read before the Section on Practice of Medicine, Medical Society of the State of North Carolina, Pinehurst, May 3, 1955.

Long Term Therapy

There is not a great deal of difference between initial and long term therapy, except that digitalis dosages need more expert control and complications must be more carefully watched for in the latter. Maintenance doses of digitalis should be continued, these usually being the equivalent of 0.15 mg. of digitoxin daily. One must realize, however, that there is a wide variation in the maintenance dosage. In my own practice I have seen variations from a low of 0.05 mg. twice weekly to a high of 0.6 mg. daily.

Diuretics are often necessary in the control of edema and at times in the control of dyspnea, particularly in the prevention of paroxysmal nocturnal dyspnea. Parenteral mercurials still seem to be the drug of choice in most cases. Depending on the patient's response, the physician must determine the maintenance dosage, many of the patients being able to go two weeks and even longer between injections. Oral mercurials are now available, although their absorption and action is somewhat less predictable and the possibility of mercury poisoning is considerably greater.

Recently the addition of Diamox and Mictine has given the physician a wide range of choice in determining the diuretic most suitable for the patient. My personal experience with these drugs has not been great enough to comment on their relative merits.

It is well known that mercurials can be given over a long period of time with reasonable safety, and I would like to report briefly the two following cases as examples of benefit obtainable from long term parenteral mercurial diuresis.

Case Reports

Case 1

This 56 year old Greek cook first came under my care June 24, 1948, with a history of hypertensive disease for at least two years, having had a cerebral thrombosis with partial hemiplegia in 1946. On initial examination he was found to be hypertensive, with a blood pressure of 230 systolic, 140 diastolic. He was fibrillating rapidly, and had marked cardiomegaly, rales at both bases, an enlarged liver, and peripheral edema. He was admitted to the hospital, digitalized, and given mercurial diuretics with good response. Over a period of approximately six years he subsequently received 2 cc. of mercurial diuretic twice weekly, maintaining his digitalis. Admittedly, he was difficult to control. He ate indiscriminately, omitted the digitalis frequently, and often indulged in excesses. His office visits during this period were interrupted by six hospital admissions for acute pulmonary edema. During his last years he was able to work a fair amount of the time. On occasion he would walk from his house to the office, a distance of some three miles, and then walk back after receiving his mercurial diuretic. He died suddenly June 17, 1954, at the end of an approximate five-mile walk to visit one of his sons.

Case 2

This 70 year old white man first came under my care January 27, 1946, with a history of congestive failure with hypertension for a period of some three years. He was already taking digitalis, but was largely incapacitated because of edema and dyspnea. At the initial examination the blood pressure was 198 systolic, 96 diastolic, and the weight 184. Digitalis was continued, and he was given 2 cc. of a mercurial diuretic twice weekly. He has continued getting this drug twice weekly to the present time. On the rare occasions when misses a dose, he gains from 5 to 10 pounds in as many days. He was not working when he started treatment and still is not working, but he has been maintained comfortably over these years with digitalis plus mercurial therapy.

Sodium restriction, as discussed under initial therapy, is highly desirable. Again it is impossible to force the patient in many instances to maintain a low sodium diet. In the long term therapy one must, of course, be aware of the possibility of sodium depletion.

Weight control is extremely important in long term therapy, and it is wise to bring the obese patient to a normal or even slightly subnormal level. The benefit obtained in some patients merely by weight reduction is remarkable. Those who refuse to cooperate in dietary control often do so involuntarily if digitalis keeps them slightly nauseated for a short period.

Underlying Conditions

The treatment of the underlying cause of congestive failure is always important, and at times becomes paramount. So often in office practice we fall into the habit of making a diganosis of congestive heart failure without establishing the cause. Many pitfalls lie in such an approach, as many cases of congestive failure cannot be successfully treated until the underlying etiologic disease is recognized and corrected. I would like to mention the following frequently overlooked conditions:

1. Hyperthyroidism
2. Myxedema
3. Anemia
4. Subacute bacterial endocarditis.

Dr. Mees and I have recently treated a case of severe myxedema with ascites and pericardial effusion. At the beginning of therapy this patient's protein-bound-iodine

was 1.5. Under thyroid medication she has become free of edema and shows marked improvement.

Control of work and play is often one of the most difficult measures to enforce. Obviously, very few of these patients should spend the rest of their lives in a rocking chair. Certainly most of them feel that such an existence would not be worth while. It is, however, extremely important to impress on them the necessity of moderation in work, play, and all details of their daily existence. To these people moderation is one of the biggest words in the English language.

Treatment of Acute Pulmonary Edema

Few medical emergencies are greater than the severe case of acute pulmonary edema. Life is untenable unless the episode is brought under control. For immediate relief there is still no available drug more valuable than morphine judiciously used, and my own practice ordinarily is to give this drug as the very first step in the management of acute pulmonary edema.

Oxygen given by mask is also a valuable therapeutic agent which in itself can be lifesaving. Positive pressure oxygen at times is even more desirable, although there are some patients who do not tolerate the sense of constriction which this method produces.

Aminophylline given slowly by vein in doses ranging from 0.25 to 0.5 Gm. almost immediately affords the patient some relief from the labored, wheezing respiration. Some of us have been unfortunate enough to have the patient die with the needle in the vein, but I still feel that it is a very valuable drug when properly used.

Reduction of the circulating blood volume is often necessary to the control of edema. The relief with a 500 cc. venesection or peripheral tourniquets or both is often dramatic. The mechanical difficulties of withdrawing the viscid blood at times makes it more feasible to depend on the peripheral tourniquets.

Digitalis again must be used in the treatment of acute pulmonary edema, but I feel that it is often well to institute other therapeutic procedures first. In such cases a rapid-acting intravenous preparation is preferable. Lanatoside C in an average dose of 1.6 mg. is quickly effective. It is sometimes desirable to give half or three quarters of this dose at the initial injection and the remainder in four hours. This is particularly true if it is not known whether previous digitalis therapy has been instituted.

Also during the acute attack of pulmonary edema the mercurial diuretics can be given. In an amazing short time diuresis will begin, reducing the circulating blood volume.

Complications

As in all therapeutic procedures, complications do arise and at times must be looked for in order to be recognized.

The most frequent complication, particularly in the long term management, are those associated with mercurial therapy. The reactions to these drugs are not common except those occuring with excess diuresis, the accompanying hemoconcentration, and electrolyte loss. In the milder cases these reactions can be treated simply by discontinuing the mercurial for a period of time. The more severe reactions require the intravenous administration of hypertonic sodium chloride, ammonium chloride, or potassium chloride, depending on the electrolyte imbalance.

At times other reactions to mercurial diuretics, including stomatitis, hemorrhagic colitis, nephrosis, and the various sensitivity reactions are seen. Fortunately these are rare.

Summary and Conclusion

The management of congestive heart failure is a complex problem, with many individual variations requiring the intelligent cooperation of both physician and patient. Of all the available measures, digitalis, mercurial diuretics, dietary restriction, and reduction in activity are the most important features.

The pathogenesis of iatrogenic heart disease is quite clear. By definition, the etiologic agent is the physician. From him the patient receives the impression that he has heart disease. This may occur through direct statements or acts to that effect, or indirectly by the patient's interpretation of certain words or acts of the physician. It is a well known fact that the common reaction of the patient on receiving a diagnosis of heart disease is fear. Individuals vary in their responses, depending upon their personal makeup, their life experience and their situational reactions. But the general tendency of fear is to produce the combination of psychologic and physiologic manifestations commonly termed "anxiety neurosis."

CURRENT CONCEPTS REGARDING THE MANAGEMENT OF PREMATURE SEPARATION OF THE PLACENTA

JULIAN BRANTLEY, M.D.
ROCKY MOUNT

The management of the obstetric patient with premature separation of the placenta has in the past been somewhat controversial, the controversy centering principally around whether the patient should be delivered vaginally or by cesarean section. The choice of a method was usually determined by the experience of the physician and was made in the hope of reducing maternal mortality from profuse and uncontrollable hemorrhage. With the development of the knowledge that uncontrollable hemorrhage in premature separation of the placenta is often due to the depletion of plasma fibrinogen, it is now realized that the method of delivery is less important than the condition of the patient at the time of delivery, with special regard to the coagulability of blood. In the past five years numerous articles have appeared in medical literature dealing with the development of afibrinogenemia in abruptio placentae. The purpose of this paper is to review the problem as it relates to the management of premature separation of the placenta in a small general hospital.

The Blood-Clotting Mechanism

A resumé of the blood clotting mechanism will be beneficial in discussing the development of afibrinogenemia in abruptio placentae. Howell's theory, which is perhaps the most widely accepted one, is as follows:

1. Prothrombin and antiprothrombin are normally held in a state of equilibrium.

2. In the presence of thromboplastin the antiprothrombin is neutralized and prothrombin is liberated.

3. In the presence of calcium salts the prothrombin is activated to form thrombin.

4. Fibrinogen in the presence of thrombin is deposited as fibrin.

In abruptio placentae thromoplastin or a thromboplastin-like substance gains entrance into the maternal circulation from the placenta or decidua. It is felt that this occurs when a retroplacental clot is large enough to cause a rise in intrauterine pressure exceeding the pressure in the venous sinusoids of the myometrium. This differential in pressure forces the thrombosplastin-like material into the maternal circulation, causing intravascular deposition of fibrin, which in turn results in a deficiency of fibrinogen in the general circulation. Normally the fibrinogen level in the gravid woman is around 300 mg. per 100 cc. The critical level for fibrinogen depletion is said to be 50 mg. per 100 cc. Below this point bleeding from the uterus, and possibly from other mucosal and serosal surfaces, is likely to be fatal.

Use of the Clot Observation Test

Clinically, the most expedient method of determining the presence or absence of a defect in the blood clotting mechanism is the clot observation test. First, the clotting time is determined by the Lee-White method, and the clot is then incubated at 37 C. for 24 hours. The absence of clot formation signifies a fibrinogen level below the critical point of 50 mg. per 100 cc. More often a clot will form within the normal time of 12 minutes, but after incubation will show evidence of fragmentation and dissolution. If this occurs within one hour, it indicates that the fibrinogen is below the level for adequate hemostasis. A clot dissolving within 24 hours indicates a decrease in fibrinogen or the presence of a fibrinolysin. It would be more accurate to determine the plasma fibrinogen level, but this is a longer procedure and many laboratories are not equipped to carry it out.

The degree of defibrinogenation in abruptio placentae bears a direct relationship to the degree of placental separation. It is felt that the larger the retroplacental clot, the greater will be the intrauterine pressure. The greater the intrauterine pressure, the larger the amount of thomboplastin-like material forced into the maternal circulation. For this reason, rupture of the amniotic sac will arrest the process of defibrinogenation by reducing the intrauterine pressure. From these facts, it becomes apparent that the proper management of abruptio placentae hinges on properly evaluating the severity of the case.

Management

Mild cases

In mild cases of premature separation of

Read before the Section on Obstetrics and Gynecology, Medical Society of the State of North Carolina, Pinehurst, May 4, 1955.

the placenta, maternal mortality is negligible and the physician is concerned primarily with salvaging the infant. If the infant is viable, the patient should be examined under proper conditions and the membranes ruptured. The amniotomy immobolizes that portion of the placenta which is separated, promoting local thrombosis and preventing further hemorrhage and separation. If the clot observation test is normal and there is no evidence of increasing bleeding or fetal distress, vaginal delivery should be anticipated. The judicious use of pituitary extract should be considered in the induction of labor. In the event of increasing bleeding or signs of fetal distress, the patient would best be delivered by cesarean section in order to save the infant. It is important that the clot observation test be normal and that blood loss be replaced before any surgical procedure is started.

Severe cases

Maternal mortality occurs in the 5 to 10 per cent of cases which make up the severe form of abruptio placentae. Here the physician is concerned entirely with saving the mother and the infant is given little consideration. Indeed, in the vast majority of cases the infant will already have succumbed.

The immediate concern upon admission to the hospital is replacement of blood. Adequate doses of morphine should be given at once. At the time that blood is drawn for cross-matching and blood counts, a specimen should be taken for clot observation. Should the blood fail to clot, fibrinogen should be administered in addition to blood, the initial dose being 2 to 4 Gm. Additional fibrinogen should be administered as indicated on the basis of the clot behavior. Should the clot observation test be normal, only blood is given.

After the patient has satisfactorily responded to the administration of blood, a vaginal examination under double set-up should be made. Regardless of the status of the cervix, amniotomy should be done. Thereafter the physician should await the onset of labor with anticipation of a normal vaginal delivery. Again, the judicious use of pitocin to initiate the onset of labor should be considered. The clot observation test should be carried out at frequent intervals (perhaps hourly) to make certain that defibrinogenation is not progressing. If after a period of, say, 10 to 12 hours, there is no indication of the onset of labor and the patient's condition is satisfactory with regard to blood replacement and blood coagulation, cesarean section may be considered.

Review of Cases

From 1949 through 1954 there were 3,570 deliveries at Park View Hospital in Rocky Mount, among which were 19 cases of severe abruptio placentae. There were no maternal deaths in the 19 cases. The fetal loss was 100 per cent. All cases were managed conservatively, with vaginal delivery. The treatment consisted of administration of morphine, replacement of blood, and aminotomy. For the greater part of this time we were not aware of the possibility of afibrinogenemia, and no studies in that regard were carried out. More recently we have been using the clot observation test in the routine management of cases of abruptio placentae. There have been evidences of fibrinogen depletion, but not to a critical level. In no case have we had to resort to the administration of fibrinogen. Recently we have observed 2 patients who showed definite derangement of the clotting mechanism, but who were managed successfully by the adequate replacement of blood alone. Brief resumés of these cases are given below:

Case Reports

Case 1

The patient was a 34 year old Negro woman, gravida 6 para 3, whose estimated date of confinement was June 7, 1955. She was admitted to the hospital at 6 a.m., April 3, 1955, with the complaint of sudden, profuse, bright vaginal bleeding having occurred at 4 a.m. There had been no abdominal pain at the time of admission. Her family physician stated that there had been no evidence of toxemia during the prenatal course. The past history was negative.

Examination upon admission showed the patient to be in shock, with the blood pressure 80 systolic, 50 diastolic, and the pulse rate 88. The mucous membranes were quite pale. General examination was otherwise negative. Abdominal examination showed a gravid uterus reaching to the level of the xiphoid cartilage. The uterus was quite tender on the left side. There were definite intermittent uterine contractions, but the uterus was well relaxed between contractions. No fetal heart tones were heard.

Initial laboratory examinations showed the red blood count to be 2,000,000 and the hemoglobin 8.5 Gm. The blood was type B Rh positive. The clotting time was 9 minutes and the clot appeared firm, with good retraction.

The patient was given morphine, and blood was started as soon as it could be cross-matched. After the patient had received 500 cc. of blood, the pressure was stabilized at 100 systolic, 60 diastolic. At

8 a.m. an aseptic examination was carried out, and the cervix was found to be long and firm but would admit the index finger. No placental tissue was felt. At this time the membranes were ruptured, and a copious quantity of amniotic fluid under pressure was released. Following this there was no excessive bleeding. Thereafter the uterus became ligneous to palpation and quite tender.

After incubation for one hour the clot had begun to fragment, and within 3 hours had completely dissolved. The patient's condition improved, however, and there was no evidence of further bleeding. She was given an additional 1,000 cc. of whole blood. Subsequent clotting times were 7 and 8 minutes, and the final clot before delivery did not dissolve.

At 6 p.m. on the day of admission the patient spontaneously delivered a 3 pound 5 ounce macerated stillborn infant. The placenta showed evidence of complete separation and a 500 cc. retroplacental clot was present. No excessive bleeding followed the delivery, and convalescence was smooth. The hemoglobin on the following day was 10 Gm.

Case 2

The patient was a 23 year old Negro woman, gravida 3 para 2, whose estimated date of confinement was February 27, 1955. She had been seen by her family physician on two occasions during the pregnancy and on each occasion the blood pressure had been about 150 systolic, 90 diastolic. She had not been seen during the month prior to admission. She went into labor at home around 4 a.m., February 18, 1955, and shortly thereafter began bleeding vaginally. About 7 a.m. she began to have excruciating pain in the abdomen and to bleed profusely. On being summoned, her family physician referred her to the hospital. She was admitted at 10 a.m. and had an immediate precipitate delivery of a 4 pound 4 ounce stillborn infant. The placenta showed evidence of complete separation and 700 cc. of blood clots followed. The blood pressure was 116 systolic, 60 diastolic, and the pulse rate was 92. The red blood cell count was 2,300,000, and the hemoglobin was 6.5 Gm. The clotting time was 11 minutes. The patient's blood was found to be type A Rh positive.

Administration of compatible blood was immediately started. Though the uterus seemed well contracted, the patient continued to bleed moderately. At 11:30 a.m. she went into profound shock, and blood pressure was not obtainable. Examination of the initial blood clot showed that it had begun to fragment at the end of an hour, but had not dissolved. Blood was begun in additional portals, and a vasopressure drug was administered. The blood pressure promptly rose to 100 systolic, 60 diastolic and there was no evidence of further bleeding. The patient was given a total of 2,000 cc. of blood. The blood pressure leveled off at around 140 systolic, 90 diastolic. The hemoglobin the following morning was 10.5 Gm. The initial blood clot completely dissolved in three hours. Subsequent blood specimens clotted normally, and the incubated clot was stable. The patient convalesced uneventfully thereafter.

These cases illustrate the possibility of reversing the trend towards afibrinogenemia by amniotomy and the replacement of blood loss. I feel that virtually all except the far advanced or neglected cases will respond to these measures. I further feel that the cases of severe abruptio placentae that cannot be managed to the patient's advantage by conservative means with vaginal delivery, is rare.

In view of the literature and our experience, four points should be emphasized.

1. Failure of the blood to coagulate in abruptio placentae is rare, but when it does occur it constitutes an obstetric complication of major proportion. Because of its gravity, all cases of premature separation of the placenta should be managed with this complication in mind.

2. By the use of the very simple clot observation test, a rough evaluation of the fibrinogen level can be obtained.

3. Any institution in which obstetrics is practiced should be prepared to meet the problem of afiribrinogenemia by keeping an adequate supply of fibrinogen on hand.

4. The majority of cases of severe abruptio placentae will respond to conservative management, with the use of morphine, blood replacement and amniotomy.

Abstract of Discussion

Dr. James Donnelly (Winston-Salem): This is a fascinating complication, and one which has attracted considerable attention in the current literature. I will restrict myself to the most troublesome points.

Concerning the etiology, it should be made clear that two problems are involved. One is that of defibrogenation, in which the amniotic fluid or placental tissue enters the blood stream and causes defibrination. In the problem of septic abortion, the primary deficiency is in the liver. These patients do not form fibrinogen. Liver disease rather than defibrinogenation is the problem.

The Lee-White clotting test is the key to the situation, at least in most hospitals in the state. It is a simple test, and can be performed anywhere with three test tubes 8 mm. in diameter. One cubic centimeter is placed in each test tube. The first tube is tilted at 15-second intervals until the blood becomes solid. The second tube is tilted and the time required for solidification is known as the clotting time. If a larger tube is used, somewhat more time will be required. The third tube is the key. Watch for clotting behavior, which as far as I can gather from the literature, is the crux of the whole matter.

I have tried to establish the relationships between clot behavior and fibrinogen levels as found in the varying phases or degrees of afibrinogenemia. In the first group of cases fibrinogen levels fall within normal limits. Reaction occurs within one to 24 hours, and there is no dissolution. In the second group, representing what some would call the subclinical phase, levels range from 150 to 220 mg. per 100 cc. Clotting time may be delayed, and some dissolution may occur within 24 hours. In the third group, manifesting obstetric shock levels range from 100 to 150 mg. per 100 cc. Clotting time is usually delayed and partial dissolution occurs in from one to three hours. The fourth group represents a more severe form of shock, with fibrinogen levels of 60 to 100 mg. per cc. In these cases the clot is soft, fragile, and abnormal from the first, with early dissolution. Not many patients

are found in the fifth group, in which levels range from zero to 60. In this group, there is no clotting whatsoever.

With regard to treatment, two comments can be made. The first regards bleeding in the last trimester of pregnancy. All patients with bleeding in this state should be admitted to the hospital immediately, even though the bleeding is minimal. It is essential to cross-match 2,500 cc. of blood. In a series of 50 cases reported recently, that was average amount used in treatment.

With regard to fibrinogen, series in which transfusion alone proved adequate treatment have been reported. Although I have had no experience with it, I gather from others that fibrinogen is a helpful agent. Transfusion of blood is necessary, however.

I would emphasize rupture of the membrane, though I don't think that cesarean section is done necessarily for the survival of the baby. In one series of cases there were 62 pregnancies with 46 stillbirths, including a fair number of cesarean sections. In these cases I would guess that the sections were done for the benefit of the mother.

There is probably a valid reason for resorting to cesarean sections for some of these mothers who do not respond to rupture of the membrane and replacement of blood and fibrinogen. I would like to emphasize, however, that if a section is planned, it is essential to have the clotting mechanism as near normal as possible.

Many writers speak of infusing fibrinogen during the operation. A Boston group refrained from 8 to 12 hours when their hand was not forced. In an emergency, they infused fibrinogen during the operation, which I think makes good sense.

The problem of postpartum hemorrhage should also be emphasized. These patients bear watching. The fact that they have survived the delivery doesn't necessarily mean that they are safe. They should be watched not only for immediate postpartum bleeding but for delayed hemorrhage, which may occur hours later.

Dr. Hunter Jones (Charlotte): I cannot let go unchallenged some of the statements that have been made today. Dr. Brantley's fetal loss, if I understand correctly, was 100 per cent. As I reported about two years ago, out of 10,000 deliveries at Charlotte Memorial Hospital, the fetal loss from sections in cases of accidental hemorrhage was somewhere between 30 and 35 per cent. I can't recall the over-all fetal loss, vaginal and sectional, but it was a far cry from 100 per cent.

In our hospital, if a patient comes in with premature separation of the placenta and the baby is not only viable but in good condition, we don't wait to see if the mother can be delivered vaginally. We —at least some of us—do a cesarean section. Over the country there are two schools of thought on the subject; the conservatives do only vaginal deliveries. In our hospital the section rate is 4 per cent. At times it has been as high as 5.2 per cent, and in the case of individual physicians 6 or 7 per cent. I am sure that the fetal salvage is considerably better than that cited by Dr. Brantley.

I would disagree that we perform cesarean sections only for the benefit of the mother. Certainly that is the primary reason. In some of the cases, even with stillbirths, the mother's ultimate outcome depends on the procedure followed. As Dr. Donnelly said, with the administration of blood and fibrinogen section may be the best solution, but I would disagree that the fetus is discounted in the decision. I think we can all agree upon that.

Where we disagree is in regard to the patient who comes in bleeding. As far as we know, she hasn't reached the stage of afibrinogenemia. We type and cross-match the blood and rupture the membrane. The cervix will admit one finger. The patient is not in active labor. A decision has to be made now. Shall we perform a section or await vaginal delivery. In the past I have not hesitated at that stage of the game to decide on a section, even in the absence of fetal distress. I want to stress that point. If you wait until the baby is damaged, why perform a section? Do you know that, obstetrically speaking, the greatest cause of spastic children at Johns Hopkins Hospital, insofar as an honest decision could be reached, was found to be bleeding from premature separation of the normally implanted placenta?

This is not the horse and buggy days of obstetrics. We are behind the times if we think we have done all that is necessary when we save the mother.

Certainly in premature separation of the normally implanted placenta we have been satisfied too often, in my opinion, with saving the mother. We haven't had a maternal death in the Charlotte Memorial Hospital from bleeding since the hospital was opened.

I cannot agree with the theory of conservative management 100 per cent. In this day of modern obstetrics, it is possible to salvage both the mother and baby undamaged. We don't want a spastic child.

Dr. Hampton Mauzy (Winston-Salem): I disagree with Dr. Jones on one or two points. How does he differentiate between marginal rupture of the sinus and abruptio placenta? In my opinion marginal sinus rupture is sometimes wrongly diagnosed as abruptio placentae. Furthermore, I want to know if he performs a section on every woman who comes in bleeding during the last trimester of pregnancy. Personally, I don't believe that it is necessary. And I believe that few, if any babies are ever saved in true abruptio placentae. If I do a section in such a case, and the baby is delivered alive and well, the outcome is due to God and not to anything I did.

I might add this: We carefully observe the woman who is bleeding in the third trimester of pregnancy. We are trying to give the baby the best possible chance of living. I don't believe any babies are saved in these cases by cesarean sections.

Dr. Jesse Caldwell (Gastonia): I will leave the controversy a moment to comment on the problem of hemorrhage at the time of labor and pregnancy due to hypofibrinogenemia. In the past six months I have known of several hemorrhagic complications at delivery or immediately afterward. If the attending physician had not had an inkling of the role fibrinogen plays in such cases, disaster would have resulted, as it did in one case.

The causes of afibrinogenemia have been listed in every specialty journal during the past several years. From experience with 2 cases, I would like to add one other to the list—infection, or septicemia. Two patients with ruptured appendix in pregnancy, one in the middle trimester and one in the last, showed definite afibrinogenemia. Both had gastrointestinal hemorrhage, and one case resulted in death. The other patient was saved by early recognition of the condition when she vomited blood before leaving the delivery table after giving birth to a stillborn infant three weeks following an operation for ruptured appendix.

The new fibrinogen test may not be entirely reliable unless the technician has had a great deal of experience. In order to get the fibrinogen from the Red Cross, it is necessary to show that definite afibrinogenemia is present. It may be that 3 or 4 Gm. are not necessary. One gram has brought spectacular results in my experience. Since the test

may not be entirely reliable, it may be wise to administer fibrinogen in any case of postpartum hemorrhage.

Dr. L. C. Ogburn (Winston-Salem): I hesitate to enter the cesarean section controversy. I doubt if the contenders on either side are as in extreme in practice as they sound. By maintaining a flexible position about half-way between the two extremes, I believe we can hope to save a good number of the babies and almost all the mothers.

Dr. Jones: To answer Dr. Mauzy's questions: Obviously, if we did sections on all patients who bleed during the last trimester of pregnancy, our section rate would be greater than it was last year—3.2 per cent. As to how to differentiate between the rupture of a marginal sinus and abruptio placentae, many practitioners are in doubt. The best reference I can give is Drs. Graham, Bartholomew and Fish at Emory.

I don't agree that the patient in the last trimester of pregnancy should not be examined. If the patient bleeds on careful examination with a speculum, she was bleeding already.

Marginal sinus rupture, as I understand it, is a condition that frequently occurs when the blood loss is only moderate. At Emory they accept that fact and let the patients go home if the bleeding stops. They may return as many as two or three times. The bleeding may increase with each recurrence, or it may not. That isn't true with accidental hemorrhage. A real hemorrhage doesn't stop by itself.

Accidental hemorrhage produces certain signs and symptoms, beginning with localized tenderness which the patient hasn't had before. It is important to make an examination with a speculum as well as a digital examination.

Dr. Brantley (closing): In answer to Dr. Jones, I would say that he has failed to differentiate between the mild and severe form of abruptio placentae. Severe abruptio is, by definition, one in which the infant is dead. It is obvious that there can be no fetal salvage in this group. We frequently section patients with mild abruptio placentae, and our fetal salvage in that group is good.

It is well known that hookworm disease, malaria, and tuberculosis are intimately related to malnutrition in many persons who suffer from these diseases, but whether or not the relationship is causal defies affirmation expect in certain individual situations. The sufferer of malaria or hookworm disease may be malnourished because of anemia that reduces his productive and earning capacity and therefore his ability to provide for his food needs. Or the malnourished person, as a result of diminished resistance, may fall an easy victim to such diseases. Whatever may be the relationship, it is clear that the well-being of the individual is compromised by malnutrition as well as by certain specific diseases.—Institute of Inter-American Affairs, Pub. Health Reports, Nov., 1953.

* * *

Although much progress has been made, multiple screening is still in an evolutionary stage. Screening and follow-up programs for syphilis and tuberculosis have been highly developed, but this is not true of screening for other diseases or for groups of diseases. Much remains to be learned through evaluation of multiple screening, in terms of accomplishments and costs of procedures to be followed at various stages from the original screening through the entire follow-up.—Arnold B. Kurlander, M.D., and Benjamin E. Carroll, M.A., Pub. Health Reports, Nov., 1953.

REPORT OF AN EIGHT-YEAR CURE OF CARCINOMA OF THE BREAST COMPLICATING PREGNANCY

JAMES F. MARSHALL, M.D., F.A.C.S.

WINSTON-SALEM

Reported five-year cures of carcinoma of the breast complicating pregnancy are relatively infrequent. In general there is a feeling that few, if any, patients survive the five-year period, particularly when the axillary nodes are involved. Haagensen and Stout[1], in a paper in 1943, stated that the co-existence of cancer of the breast and pregnancy or lactation was a contraindication to radical surgery. In a later article, Haagensen[2] modified this position and said he would consider operation in less advanced cases of this type.

Harrington[3] has reported one of the larger series of cases in which cancer of the breast was associated with pregnancy or lactation. There were 92 patients in his series, 11 of whom were pregnant at the time of operation. Sixty-three per cent of these patients had axillary metastases at the time of operation, as compared with 63.8 per cent of those not associated with pregnancy, while 90 per cent of those lactating at operation had axillary metastases. In those without axillary metastases, the five-year cure rate was 75 per cent, as contrasted to zero in the group with axillary metastases who were pregnant at operation.

Geschickter[4] stated that of 15 patients operated upon for carcinoma of the breast during pregnancy, none survived the five-year period.

In a recent article, Adair[5] reported a large series of patients, of whom 48 were pregnant at the time of the operation. The five-year survival rate in these patients was 57 per cent, Of those who were aborted, 69.6 per cent survived five years, whereas of those not aborted, 44 per cent survived the five-year period. The results were even more striking in the group of 24 patients with involvement of axillary nodes. Twelve patients in this group were aborted, and 66.6 per cent survived five years, whereas of 12 patients not aborted, only 25 per cent survived the five-year period. These results, obtained by an aggressive approach to the problem, are unusually good and should en-

courage those surgeons who deal with this condition.

There is a generally accepted method for handling carcinoma of the breast. Opinion regarding those cases associated with pregnancy, however, appears to be divided—some advocating radiation but not operation, others radical mastectomy followed by radiation in cases involving axillary nodes. Adair[5] recommended radical mastectomy followed by radiation in those cases with involved nodes, and, in addition, castration and abortion in patients not near term. Many feel, after the teaching of Beatson[6], that a small percentage will be benefited by castration. The eight-year cure of the patient reported in the following case followed this latter method.

Case Report

The patient was a Negro woman, aged 44, para 6, gravida 7, whom I examined on November 14, 1946. She had first noted a mass in her right breast in July, 1946. The mass had gradually increased in size. Her last menstrual period was August, 1946.

Physical examination revealed a healthy-looking 44 year old woman. The inner lower quadrant of the right breast was the site of a 2½ cm., hard, nontender mass attached to the overlying skin and slightly fixed to the underlying fascia. One hard node was palpable in the axilla. The left breast was normal.

The abdomen presented a mass in the suprapubic region palpable almost to the umbilicus. Pelvic examination revealed a uterus which was irregular, soft, and commensurate in size with about a 4 months' pregnancy.

Radical mastectomy was performed on November 22, 1946, after a frozen section confirmed the clinical diagnosis of carcinoma of the breast. Pathologic report was scirrhous carcinoma with metastases to the regional nodes.

Since interruption of the pregnancy and castration was desired because of the positive axillary nodes, supracervical hysterectomy and bilateral salpingo-oophorectomy were performed on December 3, 1946. The uterus contained a 3½ to 4 month fetus and several fibroids. The patient made an uneventful recovery, and was discharged from the hospital 10 days following laparotomy.

Between January 6, 1947, and February 12, 1947, the patient received x-ray therapy over the operative site, axilla, anterior mediastinum, and supra- and infra-clavicular areas on the right—1,600 r to the anterior axilla, 1,600 r direct to the axilla, 2,000 r to the anterior mediastinum, and 2,000 r to the supra- and infra-clavicular areas, right.

This patient has been followed at six-month intervals since 1947. When last seen by me in August, 1954, she had a pleural effusion. This finding was thought to be due to tuberculosis, for which she has been confined to the Western North Carolina Sanatorium since August. A letter from the medical director in January, 1955, stated that the pleural effusion had disappeared, and that although it has not been possible to prove that she has tuberculosis, that is their diagnosis, and he can find no evidence of cancer in the lungs or elsewhere.

Summary

An eight-year cure of a patient with carcinoma of the breast and metastases to the axillary nodes associated with pregnancy has been reported. Treatment was by radical mastectomy, bilateral oophorectomy, and interruption of pregnancy (supra-cervical hysterectomy), followed by x-ray therapy.

References

1. Haagensen, C. D., and Stout, A. P.: Carcinoma of the Breast, Ann. Surg., 118:859-870 (Nov.) 1943.
2. Haagensen, C.D.: The Treatment and Results in Cancer of the Breast at the Presbyterian Hospital N.Y. City. Am. Roentgenol. 62:328-334 (Sept.) 1949.
3. Harrington, S.W.: Carcinoma of the Breast: Results of Surgical Treatment When the Carcinoma Occurred in the Course of Pregnancy and Lactation and When Pregnancy Occurred Subsequent to Operation. Am. Surg. 106: 690-700 (Oct.) 1937.
4. Geschickter, C.F.: Diseases of the Breast, ed. 2, New York J. B. Lippincott 1945, p. 175.
5. Adair, F.E.: Cancer of the Breast, Surg. Clin. North America 313-327 (April) 1953.
6. Beatson, G.T.: On the Treatment of Inoperable Cases of Carcinoma of the Mamma, Lancet 2:104-107; 162-165 (July) 1896.

Study Finds Aspirin As Effective As Hormones In Treating Rheumatic Fever

Aspirin is apparently as effective as the hormone drugs ACTH and cortisone in treating acute rheumatic fever in children under the age of 16, according to results of a long-term, cooperative clinical study sponsored by the Council on Rheumatic Fever and Congenital Heart Disease of the American Heart Association and the Medical Research Council of Great Britain.

The continuing study, begun in 1951, further disclosed that aspirin was more successful than either of the hormones in suppressing symptoms of the disease over a six to nine-week observation period. At the end of one year, the proportion with residual cardiac damage was similar in the three treatment groups. The report is published in *Circulation* (March 1955).

EYE INJURIES FROM CHRISTMAS TOYS

DAN CURRIE, M.D.

FAYETTEVILLE

During the Christmas holidays—that is, from the time schools close until they reopen—eye injuries in children always increase. These injuries not only occur in greater numbers during this holiday period than any other period of the year, but they are exceptionally severe.

Each year for four years four ophthalmologists in Cumberland County have made a combined effort during this critical period to study the problem and to put before the public the dangers connected with the improper use of certain toys, especially those involving missiles. Even miscellaneous eye accidents not associated with projectile toys increase during the Christmas vacation, perhaps because of the renewed vigor with which a child plays upon his release from the daily grind of school. Possibly, too, the preparation for the holiday festivities requires more of the parents' attention than they realize and the children receive less parental supervision in their play. One 10 year old child playing an improvised game of blind man's buff had his head wrapped in a sweater as the blindfold. Upon its being snatched off, his face, a broken button made a linear laceration of the cornea through which there was an avulsion of the torn iris, the lens, and most of the vitreous. The child was not seen by a physician for three days, and by this time panophthalmitis had developed. The eye was enucleated.

Another little girl was struck in the eye with the corner of a wooden penny match box. She sustained a V shaped laceration of the cornea. Vitreous and lens were found in the lower fornix. The ciliary body had been lacerated at each arm of the V. The eye was blind and was enucleated.

These accidents were bizarre. They are described to call attention to the apparently innocuous articles and games that may bring tragic results, as was the case in this study. Most of the injuries had quite ordinary causes: the thrown rock, the fall into winter weed stubble, the broken piece of glass (usually a pane), fence wire.

To some degree these types of accidents could be prevented by the child himself, since most children have been instructed not to play in areas where such objects may be found.

Types of Injuries

A breakdown of all types of eye injuries that were serious enough to require as much as two weeks treatment or observation by an ophthalmologist are listed below. These cover the injuries referred to ophthalmologists in a community of 70,000 people during the 1954 Christmas vacation period. The total number represents a decrease of 30 per cent from that of previous years.

Table 1
Classification of Injuries

Cause of Injury	No.
Air rifle	9
Bow and arrow	2
Spring rubber cup pistol	2
Miscellaneous	
Rock	2
Wire	1
Glass	3
Button of sweater	1
Stick (homemade sword)	1
Screwdriver (from mechanical toy)	1
Weed stubble	1
Matchbox	1
Total	**24**

Of this total number of 24 severe injuries in which some vision was lost, 7 eyes were enucleated. Injuries not requiring lengthy treatment or resulting in some loss of vision are not included in this report.

Injuries resulting from any missile-throwing toy, from a sling-shot to an air rifle, proved to be most serious. These ranged from traumatic iritis to complete destruction of the globe. The arrow with a metal tip is responsible for the most destructive injury, but arrows with rubber vacuum cups have caused traumatic iritis, and in one case retinal detachment. There is on most toy counters a plastic pistol that has as its projectile a 6-inch stick with a rubber cup. This gun is a favorite of smaller children, and is particularly treacherous because it is considered to be an indoor toy. Two severe injuries resulted from these pistols in the 1954 study. The B B gun, or air rifle, damaged many eyes, but resulted in only one enucleation.

None of these toy weapons is a respecter of persons. The ages of the children treated ranged from 9 months to 15 years. The 9 month old child was sitting in his mother's lap inside the house when an air rifle pellet

entered through the window and struck the baby's eye. This eye was enucleated.

Many of the air rifle injuries resulted from ricochets. In one instance a bullet ricocheted from the wooden target, only 8 feet away, to the sighting eye of the boy firing the gun. Others ricocheted into the eyes of bystanders some distance away. Actual air rifle battles, or cowboy and Indian games resulted in no serious eye injuries, although pellets were removed from the skin of the forehead and lids of the victims.

Conclusion

This paper is not an attempt to bar the sale of any of the toys mentioned, but to find some practical means of educating the public as to their dangers and as to how they might be used with greater safety. The community from which this report comes is in no wise different from others, since the same toys are available everywhere and children's games and use of the toys are essentially the same. To recite the statistics to the populace in general or to individuals has a modicum of effectiveness; but constant and dramatic presentation of the facts with descriptions of how the accidents may occur has been, and will continue to be, more helpful.

Methods of giving this information to the public are numerous, and all have merit. Newspaper articles with pictures, spot radio reminders, and television shows are beneficial. A discussion at the November and December meetings of Parent-Teacher Associations probably reaches the most interested people. Arrangements with grammar school principals to have two or three uniformed men (military men or policemen) come to the school and demonstrate the correct use of rifles, pistols, and bows and arrows impress the children. Explorer Scouts and Boy Scouts may also be used for this purpose, as many counties are planning to do this year.

Minor details that may easily be left out of the instructions are important—for example, the preparation of a proper target from which it is impossible for the missile to ricochet. The target should be backed by a bag filled with cotton, sand, or straw. Two injuries in the 1954 report were the result of ricochets from paper targets tacked on boards.

All medical men must share the responsibility of helping Santa Claus complete his mission without leaving a series of tragedies in his wake. The best approach is to instruct children in the use of dangerous toys before Santa Claus comes.

Help Fight TB

Buy Christmas Seals

North Carolina Medical Journal

Owned and published by
The Medical Society of the State of North Carolina,
under the direction of its Editorial Board.

EDITORIAL BOARD
Wingate M. Johnson, M.D., Winston-Salem
Editor
Miss Louise MacMillan, Winston-Salem
Assistant Editor
Mr. James T. Barnes, Raleigh
Business Manager
Ernest W. Furgurson, M.D., Plymouth
John Borden Graham, M.D., Chapel Hill
G. Westbrook Murphy, M.D., Asheville
William M. Nicholson, M.D., Durham
Robert W. Prichard, M.D., Winston-Salem
Hubert A. Royster, M.D., Raleigh

Address manuscripts and communications regarding editorial matter to the
NORTH CAROLINA MEDICAL JOURNAL
300 South Hawthorne Road, Winston-Salem 7, N. C.

Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 203 Capital Club Building, Raleigh, N. C.

All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Annual subscription, $3.00 Single copies, 50¢

Publication office: Carmichael Printing Co., 118 West Third Street, Winston-Salem 1, N. C.

"The prime object of the medical profession is to render service to humanity; reward or financial gain is a subordinate consideration. Whoever chooses this profession assumes the obligation to conduct himself in accord with its ideals."—Principles of Medical Ethics of the American Medical Association, Chapter 1, Section 1.

NOVEMBER, 1955

UNITED MEDICAL RESEARCH FOUNDATION

The United Medical Research Foundation of North Carolina, Inc., was organized in March, 1955, by a group of leading citizens from some 25 North Carolina United Fund Committees who were vitally concerned with the problem of providing the funds for medical research on a sound and sensible basis.

The purpose of the Foundation as stated in its constitution is "to provide medical research funds for polio, tuberculosis, heart diseases, cancer, diseases which cripple children and adults, and other diseases."

Elected as first president of the Foundation is a prominent Durham physician and member of the staff of Duke Hospital, Dr. James H. Semans.

An integral part of the Foundation's structure is its Research Advisory Committee. This committee is composed of the deans of the three medical schools in North Carolina—Dr. W. Reece Berryhill, School of Medicine, University of North Carolina, Chapel Hill; Dr. C. C. Carpenter, Bowman Gray School of Medicine, Winston-Salem; and Dr. W. C. Davison, Duke University Medical School, Durham. It is the responsibility of the Research Advisory Committee to review and investigate all requests for research funds and the proposed research projects.

The Foundation is governed by a Board of Directors consisting of two representatives appointed by contributing community organizations plus members at large appointed by the Board. An executive committee consisting of the officers plus six other members of the Board supervise the transaction of the business of the Foundation and act for the Board in carrying out the purposes of the organization between Board meetings.

Serving with Dr. Semans are: Vice Presidents James M. Alexander, Charlotte; Judge Norman Gold, Rocky Mount; and Reid Holms, Winston-Salem; secretary, Mrs. T. R. McLean, Fayetteville; treasurer, Paul Wright, Jr., Durham; and Dr. Eben Alexander, Jr., Winston-Salem; John F. McNair III, Laurinburg; Thomas A. Hood, Fayetteville; John L. Stewart, Charlotte; and M. L. Street, Rocky Mount.

In a statement issued recently, Dr. Semans made the following statement regarding the program of the Foundation:

> Research into the causes and cures of the many crippling diseases which plague mankind must be furthered by all means at our command. Funds must be made available to our established institutions here in North Carolina to promote research. We can well be proud of the tremendous facilities available for the advancement of the cause of research in all fields. This is a pioneer effort and one which is being watched by the entire country as the best way yet devised for citizens of the communities of a state to provide necessary funds for medical research directly to its own established and distinguished medical centers.

Approximately $20,000 has already been made available to the Foundation from various United Fund communities. Several projects have already been recommended by the

Research Advisory Committee and approved by the Board of the Foundation.

The types of projects for which the fund will be used have been clearly defined by our Research Advisory Committee.

Primary consideration will be given to requests for the support of research projects based on new clues concerning tuberculosis, poliomyelitis, cancer, diseases of the heart, and diseases which cripple children and adults. Next year funds will be available for research on any diseases.

Research projects designed to investigate new clues in medicine are called "pilot studies." The cost of this type of research is usually comparatively small. The larger research foundations are not likely to support such projects, since it is necessary for them to go to considerable expense to investigate the worth of each one. Such an investigation is not necessary for our Foundation, which makes grants only to research workers who can be personally known to the members of our Research Advisory Committee, and responsible to them.

Once a pilot study has been completed and the results have been published in a recognized medical journal, it is often possible for the research worker to procure much larger grants from other sources in order to continue the investigation on a bigger scale. Even if the pilot project should not lead to any promising results, the money invested has served to train one or more young medical scientists in methods of research. These men form the ranks from which our great medical scientists of the future must be developed.

Another type of request which will receive serious consideration from our Research Advisory Committee is for money to continue an important research project for which other funds have been temporarily exhausted. Without stop-gap aid from the United Medical Research Foundation, it would often be impossible to keep highly trained personnel, with rare skills and techniques, long enough to complete the project. When funds have been exhausted, these individuals, with their highly prized talents, must depart, if they are to subsist. With the help of short-term support, extremely important research can be continued until renewal of a grant from one of the larger foundations (which operate on a rigidly limited annual basis) can be obtained. Once again, our Foundation has the advantage of working through the deans of the three medical schools in North Carolina, who have first-hand knowledge concerning each project for which temporary support is requested. The larger foundations, on the other hand, must carry out a complete investigation before renewing their support of a project. It is believed that, by this very practical means, our Foundation can provide an indispensable link in the chan of advancing medical knowledge.

Because of its up-to-date information concerning research grants, our Research Advisory Committee will be able to render another valuable service—that of advising applicants where they may turn for backing, if their requests do not fall within the scope of the United Medical Research Foundation of North Carolina. This service, given without cost to anybody who applies for funds, will materially advance the reputation of our state in medical research, and should also create a better relationship with applicants who have to be turned down. We want all United Fund contributors to know of this service, so that they will be able to encourage any worthy person engaged in medical research to let the Foundation know of his needs.

* * *

DR. REECE BERRYHILL HONORED

Dr. William S. Middleton, Chief Medical Director of the Veterans Administration, has recently announced the appointment of an Advisory Committee on Research, composed of four members. One of these four members is Dr. W. Reece Berryhill, dean of the University School of Medicine. The other three are Dr. J. Burns Amberson, consultant to the Chest Service of Bellevue Hospital in New York City; Dr. Carol A. Moyer, professor of surgery at the Washington University School of Medicine in St. Louis; and Dr. Harold G. Wolff, associate professor of psychiatry at Cornell University Medical College in New York City.

On behalf of the doctors of North Carolina the NORTH CAROLINA MEDICAL JOURNAL extends hearty congratulations to Dr. Berryhill for this well deserved recognition.

EYE INJURIES FROM CHRISTMAS TOYS

In this issue a very timely article by Dr. Dan Currie of Fayetteville calls attention to the marked increase in eye injuries during the Christmas holidays. The hazards of firecrackers have long been recognized by nearly all except those who manufacture and sell such products. Dr. Currie, however, has rendered an excellent service in reminding our readers that damage may also be done by relatively harmless toys. Not only ophthalmologists but all doctors would do well to read the article and then warn the parents of young children of the tragedies that may follow the annual visit of Santa Claus.

One practical way in which doctors all over the state can help spread this information is to interest their local newspaper men in publishing an abstract of Dr. Currie's article.

* * *

NEEDED: A CLEAR FOCUS ON TUBERCULOSIS

The Christmas Seal Sale provides an opportunity to focus public attention on tuberculosis, the tuberculosis association, and those things needed to protect citizens against the disease.

In the years since 1905, when our North Carolina Tuberculosis Association was founded, the death rate from this disease has been cut by more than 90 per cent.

With this drop in the death rate has emerged a changing picture in the field of tuberculosis control. The development of new and better techniques of treatment, the use of new and better drugs, and better living conditions have enabled many to stay alive who, only a few years ago, would have died of tuberculosis. Today, the emphasis is being placed on the *problem of the living*, for the fact is that *new cases of tuberculosis continue* to be reported in only slightly decreasing numbers.

Finding the people who have tuberculosis, treating them, helping them through the sometimes arduous periods of treatment, helping them to reassume their rightful place in the community, and seeing to it that continuing medical supervision is available to them, are the problems which we face today.

Solution of these problems calls for the enlistment of the interest and support of welfare and citizen groups, as well as the medical and public health professions. Such support must be based upon sound education. Education is the chief purpose of the Christmas Seal.

* * *

DR. FREDERICK R. TAYLOR

For a number of years before the final summons came on November 1, Dr. Frederick R. Taylor of High Point had been living under the shadow of Death. With commendable courage, however, he kept on with his practice and with his teaching at Bowman Gray until the week before the end.

Fred Taylor was one of North Carolina's best known and most highly respected physicians. He was almost certainly the most widely read physician in the state. He was a frequent contributor to medical literature. The late Dr. Henry A. Christian, editor of the Oxford Loose Leaf System of Medicine, selected him to write and keep up to date the Section on Rare and Unusual Diseases.

His wide reading made him a logical choice as professor of medical literature at Bowman Gray School of Medicine. And it was also natural for the students of Bowman Gray, when this spring they formed an organization to further interest in the history of medicine, to name it "The Frederick R. Taylor History of Medicine Society"—"in recognition of the long-time interest of Dr. Taylor in the subject and in its worth to the student of medicine."*

Dr. Taylor was one of the most faithful members of our State Society. He was also a member of the American Medical Association, the Southern Medical Association, the American Association for the Advancement of Science, and a Fellow of the American College of Physicians.

Fred Taylor was a real scholar and a cultured gentleman, who taught and practiced the art as well as the science of medicine.

He is survived by his widow and four children.

---

*From the constitution of the Society.

PRESIDENT'S MESSAGE

The Physician-Patient Relationship

Today, more than ever, there is an urgent need for external vigilance to guard our patient-physician and physician-physician relationship. This is more of a reminder than revelation to most of you.

It is generally recognized, but too often ignored, that the physician-patient relationship is the fundamental principle of good medicine, medical ethics, and medical law. This relationship did not just happen any more than our country, community, and state just happens to be a good place in which to work and live. It was won and given to us through the sweat and tears of our forefathers. Our American system of freedom, our patient-physician relationship, the art of medicine, and public relations are so interdependent that neither can long exist without the other. They cannot be won by surveys or bought with dollars.

There is a general feeling among doctors that the physician-patient relationship is made up of the feeling of good will, high regard, respect, cooperation, and confidence we find so necessary to the successful treatment of our patients. We value it highly, and rightly so.

The physician-patient relationship, however, is no such nebulous affair. It is an affirmed and legally binding mutual agreement, made especially between the physician and his patient. It is enforceable in the courts to the last detail. It is embodied in the common law, and is the result of hundreds of years experience in settling disputes between physicians and their patients. Failure of the doctor to live up to his bargain is a breach of trust. It has been solemnly resolved that malpractice is a great misdemeanor and offense at common law, whatever the circumstances leading to it, because it breaks the trust which the patient has placed in his physician, and tends to the patient's destruction.

A physician-patient relationship requires freedom for both the doctor and the patient. The requisite freedoms have longed been recognized as "free choice of physician" and freedom from third party intervention.

A third freedom is equally important, but is generally overlooked or taken for granted. This is scientific freedom, which as of now is being rapidly destroyed by third party intervention between the patient and his physician. Some of these third parties are the government, the labor unions, business corporations, and unfortunately some of our hospitals, insurance companies, segments of the nurses' association, health agencies, the United States Public Health Service, a few medical schools, and finally but not least, cultists—faith and fringe health healers.

Because the necessary freedoms offer a wide scope of exploitation and abuse, a strict conscience is just as an important attribute of a physician as are his skills and knowledge. That is why evidence of high moral character is a requisite for license, and why a license may be revoked for moral turpitude and unethical conduct. When you joined the society you were adjudged to be competent, of high moral character, and willing to live by the high standard of the company you keep. There is no room in the society for those who do otherwise.

A corporation, by whatever name, cannot morally or legally practice medicine or any other profession. By its nature, it is incapable of possessing the requisite knowledge of the science and the art of a profession. By its nature, it has no conscience.

Democracy recognizes no public need more compelling than the need for each individual to have complete freedom in purely personal matters. Among the most fundamental personal rights, without which man could not live in society, is the right to personal security, including the preservation of one's health, from such practices as may prejudice or annoy it.

Our patient-physician relationship encompasses the basic concept and fundamental principles upon which the art of medicine is founded. It also embodies our public relations, physician-physician relationship, and our medico-legal responsibilities. With proper physician-patient relationship, most of our major problems will cease to exist.

The third party agencies previously mentioned are perennial "do-gooders," and I am sure that many of them, except those mentioned in the last category, are motivated

by noble purposes. They are, however, misguided and uninformed as to what is best for the higher welfare of the community. Illness is a personal and real thing, the treatment of which must not be undertaken by any third party. Only a duly licensed physician can render this highly personalized service.

The federal government and other agents mentioned haven't changed their objective. Their aim is the control of medicine. Their occasional grin or smile, instead of the usual snarl, is a mask to seduce us. A man or a tiger who steps back from the fence he wants to jump in order to get a better start is not abandoning his objective. He is merely improving his chance of achieving his goal. Our enemies have used these tactics, but have not changed their objective of conquest of the medical profession. They can only be stopped by united action.

It is time for them to learn that they can shear a lamb once a year, but can skin him only once. Their motto is to pull as many feathers from the goose as they can without causing too much squawking. They have gone too far, and it is now time for us to squawk.

Confidence in the moral stamina of the medical profession has been shakened, because we have permitted a gradual piecemeal absorption of some of our rights and freedoms and have compromised our physician-patient relationship. Interventionists hope to persuade us now to go just a little bit further on the road to appeasement. Their objective is to lull us into the sleep of death. They hope to find us in a mood to face and battle the ugly facts of life, and to put off the evil day. As Louis XVI said, "And after this the deluge."

We must not let this age of specialization, marked scientific advancement, and the growing need for numerous consultations and technological assistance, disrupt our patient-physician relationship. The interjection of any third party between the patient and physician is immoral and dishonest.

In closing this message I am reminded of the short lines of a poet whose name I do not remember. It is a prayer for these days in which we are living.

God give me sympathy and sense, help keep
my courage high.
God give me calm and confidence, and please
a twinkle in my eye.

JAMES P. ROUSSEAU, M.D.

Committees and Organizations

NORTH CAROLINA STATE BOARD OF HEALTH

Dr. J. W. R. Norton, State Health Officer, announced on October 12 that the State Board of Health is authorized to request no longer that physicians submit individual reports to county health officers of children vaccinated through the use of poliomyelitis vaccine purchased through commercial drug channels. These reports were originally required to facilitate tracing the source and lot number of vaccine used in the event poliomyelitis should occur in any individual immediately following vaccination. Recently adopted changes in the testing of vaccine for safety by the Biological Laboratories of the National Institutes of Health have, it is believed, eliminated the necessity of submitting reports of each child vaccinated to county health officers. Dr. Norton stated, however, that every physician should keep in his office a careful record of the manufacturer and lot number of vaccine used in vaccinating each child.

It is the policy of the State Board of Health to include in all news releases a recommendation to the public that vaccination against poliomyelitis be obtained from private physicians. If there is insufficient vaccine available through commercial drug channels to meet demands for vaccination by private physicians, the State Board of Health will attempt to learn where vaccine may be purchased from drug houses having a surplus on hand and advise communities having a shortage where it may be obtained.

Although funds are available for purchasing more than 30 per cent of all vaccine available to this state during the shortage period, the state will continue to release 70 per cent for purchase through commercial channels until such time as demands for vaccine from physicians can be met. It is believed that under this plan a more equitable distribution of vaccine over the state can be maintained. When commercial drug channels have been adequately supplied, the State Board of Health will increase its purchase of vaccine above 30 per cent for distribution to and free administration of the vaccine by local health agencies. This will be necessary in order that as many children as possible be given an opportunity for vaccination as

far in advance of the 1956 poliomyelitis season as is possible. Funds now available for the purchase of vaccine for free administration by county health departments will not be available after February 15, 1956, unless the Congress should extend the expiration date of the present appropriation act or make available funds under a subsequent appropriation.

BULLETIN BOARD

COMING MEETINGS

Gaston Memorial Hospital Medical Symposium—Masonic Temple, Gastonia, November 30.

Fifth District Medical Society Meeting — Pine Needles Country Club, Southern Pines, December 1.

University of Florida, Tenth Annual Midwinter Seminar on Ophthalmology and Otolaryngology—Sans Souci Hotel, Miami Beach, January 16-21.

American Medical Association, Eighth Annual Medical Public Relations Conference—Hotel Statler, Boston, November 28.

American Medical Association, Ninth Annual Clinical Meeting—Boston, November 29–December 2.

Animal Care Panel (experimental animals) sponsored by New York University–Bellevue Medical Center — Henry Hudson Hotel (533 West 57th Street) New York City, December 1, 2.

American Medical Association, Committee on Toxicology and Committee on Pesticides, Symposium on Health Hazards of Chemicals—Atlanta, Georgia, December 29.

NEWS NOTES FROM THE BOWMAN GRAY SCHOOL OF MEDICINE OF WAKE FOREST COLLEGE

Dr. Emery C. Miller, instructor in internal medicine, has assumed his duties as director of the outpatient department of the North Carolina Baptist Hospital. Dr. Miller replaces Dr. Charles E. Richards, who has returned to his home state of Nebraska as associate professor of internal medicine in the school of medicine of the University of Nebraska. Dr. Miller is a native of Mebane, North Carolina, and served his internship in the North Carolina Baptist Hospital in 1949-50 following his graduation from Johns Hopkins University Medical School. He entered the military service after his internship, serving in Korea from 1950 to 1952. He held appointments as fellow and resident in the Joslin Clinic in Boston, and returned to the North Carolina Baptist Hospital in 1953 as assistant resident in medicine. For the year 1954-55 he served as fellow in internal medicine in the Bowman Gray School of Medicine, and joined the permanent faculty on July 1.

* * *

On November 8, the Chi Theta Chapter of Phi Rho Sigma sponsored the first annual Herbert M. Vann Memorial Lectureship. Dr. Vann was professor of anatomy for more than a quarter of a century, and actively participated in the affairs of the fraternity as faculty advisor, both on the campus at Wake Forest and after the school of medicine was expanded and moved to Winston-Salem. Dr. Joseph Eldridge Markee, professor and chairman of the Department of Anatomy at Duke University School of Medicine, was selected as the first lecturer in the annual series because of his many parallel interests with those of Dr. Vann. Dr. Markee has distinguished himself in his accomplishments in the field of research and teaching. He has contributed many articles to the medical literature and in recent years has achieved outstanding results in audio-visual aids, particularly in the teaching of anatomy.

NEWS NOTES FROM THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE

Dr. Ellis C. Berkowitz was appointed instructor in anatomy in the University of North Carolina School of Medicine on July 1. Dr. Berkowitz has held a position as Research Fellow at the University of California and is replacing Dr. Lionel Truscott who is now in military service. He received his A.B. in 1949, his M.A. in 1951, and his Ph.D. in 1954 from the University of California in Los Angeles.

* * *

Dr. Abraham Widra was appointed instructor in bacteriology on September 1, replacing Dr. Milton Huppert who resigned to accept a position in California. Prior to joining the University of North Carolina medical faculty Dr. Widra was research associate in the Department of Bacteriology, University of Pennsylvania. He received his M.S. in 1952 from University of Florida and his Ph.D. in 1954 from the University of Pennsylvania.

* * *

Dr. J. Norman Allen was appointed instructor in neurologic medicine on September 1. He has had medical training at Harvard Medical School, receiving his M.D. in 1949. Dr. Allen held the position as Teaching Fellow at Harvard Medical School in 1952-1953. He was Research Fellow with the Neurological Unit at Boston City Hospital in 1953-1954; and Research Fellow at McLean Hospital, Waverley, Massachusetts from 1954-1955.

* * *

A new program for training psychological interns at the North Carolina Memorial Hospital was inaugurated by the appointment of the first trainee, Miss Frances Menefee. Miss Menefee has been studying clinical psychology at the State University of Iowa, after receiving her bachelor's degree from Alabama College. She will spend a year in full time hospital work in the Department of Psychiatry getting further experience in working with a variety of patients and collaborating with the modern psychiatric team of psychiatrists, psychiatric social workers, psychiatric nurses, and occupational and recreational therapists. Trainees on this program will be drawn from applicants who are in good standing in graduate training programs in psychology departments around the country. Typically such trainees return to their own universities after the internship year to complete their work on the Ph.D. degree. This program is being supported by a United States Public Health Service training grant to the Department of Psychiatry.

* * *

Dr. Isaac M. Taylor, assistant professor of medicine, now on active duty as a lieutenant commander in the U. S. Naval Reserve Medical Corps, left Chapel Hill recently for Boston, where he will join the new U. S. Antartic expedition, "Operation Deepfreeze," leaving shortly for a camp to be set up near the South Pole. He will be gone approximately 15 months.

Dr. Taylor has for several years made a study of frostbite. His research concerns the influence of low temperatures on tissue.

AMERICAN CANCER SOCIETY, NORTH CAROLINA DIVISION

Dr. John R. Kernodle of Burlington was moderator of a medical seminar on carcinoma of the cervix at the annual meeting of the American Cancer Society, North Carolina Division, held in Charlotte on October 23. Participants were Dr. Ruth M. Graham, director of the Vincent Cytology Laboratory, Boston; Dr. Bayard Carter, Duke Hospital, Durham; and Dr. Paul Kimmelstiel, Charlotte Memorial Hospital, Charlotte. As an additional feature of the program, Dr. Cornelius P. Rhoads, director of the Sloan-Kettering Institute for Cancer Research, discussed "The Relation of Increased Longevity to Neoplasia." Dr. Rhoads also spoke at the banquet meeting on "Progress in Cancer Research."

NORTH CAROLINA SURGICAL ASSOCIATION

The North Carolina Surgical Association held its annual fall meeting at Sea Island, Georgia, on September 23 and 24.

The program consisted of papers by Dr. William Hollister on "Surgery of the Lower Esophagus and Upper Stomach"; Dr. Woodhall Rose on "Carcinoma of the Stomach"; and a symposium on "Duodenal Ulcer" with Dr. Gordon Sinclair, Dr. Simmons Patterson, Dr. Frank Johnston, and Dr. John Hamrick participating. Dr. Eben Alexander discussed "Newer Concepts in Neurosurgery"; Dr. William Pitts, "Surgery for Intractable Pain"; and Dr. Louis Shaffner, "Surgery for Tracheo-Esophageal Fistulae."

Officers elected were Dr. Edward W. Phifer, Morganton, president; Dr. Alexander Webb, Raleigh, president-elect; Dr. Howard Starling, Winston-Salem, vice president; and Dr. Alfred Hamilton, Raleigh, secretary-treasurer.

NORTH CAROLINA TUBERCULOSIS ASSOCIATION

Governor Luther H. Hodges has designated this year as the fiftieth anniversary year of the North Carolina Tuberculosis Association.

In making the designation, Governor Hodges congratulated members of the NCTA and commended the thousands of volunteers who have participated in the fight against tuberculosis during the past 50 years.

* * *

A pilot study in tuberculosis testing will be conducted among preschool children who attend the 30 child health centers scattered throughout Mecklenburg County.

The study will be conducted by the Mecklenburg County Health Department with the Mecklenburg Tuberculosis and Health Association cooperating by purchasing the testing material and assisting in the hiring of additional part-time personnel to work with statistical follow-up.

The practice of tuberculin testing is becoming widely accepted as a source finding technique. This study is expected to shed a good deal of light on the incidence of tuberculous infection in the county.

An estimated 1,000 to 1,500 children will be involved in the study.

SIXTH DISTRICT MEDICAL SOCIETY

The meeting of the Sixth District Medical Society was held at the State Hospital, Butner, on October 5. One hundred and one members and guests were registered.

The president, Dr. C. T. Wilkinson of Wake Forest, presided. The afternoon program consisted of the following speakers and subjects: Dr. Charles B. Wilkerson, Raleigh, "Lupus Erythematosus," discussant, Dr. Joseph M. Hitch, Raleigh; Dr. LeRoy Allen, Raleigh — "Neurosurgical Procedures for Pain Relief"; Dr. Charles E. Flowers, Jr., University of North Carolina, "Evaluation of the Newer Therapeutic Agents in the Treatment of Toxemia"; Dr. John T. Sessions, Jr., University of North Carolina — "The Management of Severe Liver Disease"; Dr. Guy L. Odom, Duke University, "Nerve Lesions around the Wrist and Hand." During the brief intermission refreshments in the form of low sodium milk products and delicious cookies and bisquits were served through the courtesy of the Dietetics Department of the University of North Carolina.

At a business session which was held following a buffet supper, the following slate of new officers was approved: president—Dr. L. E. Fields, Chapel Hilll; vice president—Dr. Lillard F. Hart, Apex; secretary-treasurer—Dr. Seth G. Hobart, Durham.

The president recognized several members and guests including Dean Reece Berryhill, University of North Carolina Medical School; Mrs. R. D. Croom, Maxton, president of the Medical Auxiliary of the State of North Carolina; Secretary and Mrs. James T. Barnes; Mr. William N. Hilliard, director of Public Relations for the State Medical Society; Mrs. C. T. Wilkinson, Wake Forest, Auxiliary councilor; Dr. George W. Paschal, Jr., Raleigh, councilor; and Dr. Rieves W. Taylor, Oxford, vice councilor. Dr. Paschal brought to the Society's attention recent unfortunate legislation lowering the disability age limit from 65 to 50. Dr. T. T. Jones, Durham, made an earnest appeal for increased support of the American Medical Educational Foundation. The scientific program was resumed by Dr. D. M. McNelis, superintendent of the State Hospital, Butner, who discussed "The Relationship between the State Hospital and the Practicing Physician," and concluded by Dr. O. Norris Smith, Greensboro, who presented "The Doctor's Insurance Program."

The members of the Medical Auxiliary, meeting in an adjoining room, heard an address by Robert Helms, Jr., of Wake Forest College, on "Mental Hygiene."

FORSYTH COUNTY MEDICAL SOCIETY

The monthly meeting of the Forsyth County Medical Society was held in Winston-Salem on November 8. The program consisted of a panel on public relations and medical ethics, led by Dr. Fred Garvey, chairman of the public relations committee.

EDGECOMBE-NASH MEDICAL SOCIETY

The Edgecombe-Nash Medical Society held its regular meeting in Rocky Mount, November 9.

Dr. R. D. Karnegay was in charge of the program and presented as speaker Dr. S. P. Perry, chief radiologist at Watts Hospital in Durham, who discussed certain phases of radioactive isotope therapy.

At the October meeting Dr. Susan Dees of Duke Hospital spoke on pediatric allergy.

University of Florida Seminar in Ophthalmology and Otolaryngology

The tenth annual University of Florida Midwinter Seminar in Ophthalmology and Otolaryngology will be held at the Sans Souci Hotel in Miami Beach the week of January 16, 1956. The lectures on ophthalmology will be presented on January 16, 17, and 18, and those on otolaryngology on January 19, 20, and 21. A midweek feature will be the Midwinter Convention of the Florida Society of Ophthalmology and Otolaryngology on Wednesday afternoon, January 18th, to which all registrants are invited. The registrants and their wives may also attend the informal banquet at 8 p.m. on Wednesday. The schedule has been changed to provide a maximum time for recreation each afternoon.

The seminar lecturers on Ophthalmology this year are: Dr. Francis H. Adler, Philadelphia; Dr. A. Gerard DeVoe, New York; Dr. Michael J. Hogan, San Francisco; Dr. C. Wilbur Rucker, Rochester, Minnesota; and Dr. A. D. Ruedmann, Detroit, Michigan. Those lecturing on Otolaryngology are. Dr. Frederick A. Figi, Rochester, Minnesota; Dr. Lewis F. Morrison, San Francisco, Dr. Charles E. Kinney, Cleveland; Dr. John R. Lindsay, Chicago; and Dr. Bernard J. McMahon, St. Louis.

News Notes from the American Medical Association

Guarding the Worker's Health

Ways of keeping the American worker healthy and on-the-job will be considered by representatives of labor, management, government and the medical profession at the sixteenth annual Congress on Industrial Health Monday and Tuesday, January 23-24 at the Sheraton-Cadillac hotel, Detroit. Sponsored by the American Medical Association's Council on Industrial Health, the sessions on Monday will be devoted to "The Role of Medicine in Industrial Relations" and "Medicine's Responsibilities in the Automotive Age."

A special all-day program on Tuesday will be built around the subject, "Absence from Work Due to Non-Occupational Illness and Injury," with particular reference to integration between industrial and private physicians. This program—arranged by the A.M.A.'s Committee on Medical Care for Industrial Workers—will cover such aspects as the nature and extent of the problem, efforts of management, labor, and the community to reduce job absence, the role of various persons (for example the worker, personnel director, nurse, doctor) in this field, and a discussion of the Ontario System of recording absence data.

* * *

U.S. Medical Schools Need Your Dollars Now!

Hurry! Hurry! Hurry! There's still time left in 1955 to send in your dollars to the American Medical Education Foundation for our nation's 81 medical schools. The A.M.E.F.'s Annual Tax Mailing —now being distributed to all A.M.A. members— stresses the importance of an immediate contribution. Individual financial help is especially needed at this time. During the first nine months of 1955, total gifts amounted to $540,343.33 (including an A.M.A. grant of $100,000) as compared with $996,198.75 during the same period in 1954. Every effort must be made during the remainder of this year to meet or exceed last year's record.

Public Relations Conference Set for Boston

Plan now to attend A.M.A.'s eighth National Medical Public Relations Conference November 28 at the Hotel Statler, Boston, to find out about the medical profession's plans for next year in the fields of legislation, public relations and medical service. The program also will include discussions on our free enterprise system and on America's future by outstanding speakers from all over the country.

One of two annual public relations meetings conducted by A.M.A. as a service to local medical societies, the Conference is especially geared to society officers and committee chairmen who establish PR policy.

* * *

A.M.A. Forms New Committee on Geriatrics

Problems of the aging will be up for careful scrutiny by a newly formed Committee on Geriatrics of the A.M.A.'s Council on Medical Service. The group is expected to hold an organizational meeting in Boston following the ninth Clinical Session. The following members have been selected so far: Drs. Henry Mulholland of Charlottesville, Virginia, (a member of the Council) chairman; Edward L. Bortz, Philadelphia; Theodore J. Klumpp, New York, and Wingate M. Johnson, Winston-Salem. Three others will be appointed later, bringing the total committee to six plus a chairman.

* * *

New Radio Series Features "Facts" on Diseases

On a hunt for the "facts" surrounding various diseases, the American Medical Association has come up with the answers in a new series of 13 electrical transcriptions for use on local radio stations. Entitled, "Facts," the programs discuss significant progress in major areas of medicine like heart surgery, cancer, mental health and multiple sclerosis. Each program—a drama with summary by an outstanding medical authority in the field— is timed for a 15-minute radio slot.

Titles include: rheumatic fever, infantile paralysis, arthritis, epilepsy, multiple sclerosis, growing old, breast cancer, tuberculosis, leukemia, mental health, heart surgery, hypertension and cerebral palsy. For further information, write the Bureau of Health Education.

* * *

A.M.A. Sponsors Conference on Hazards of Chemicals

Thousands of common home, industrial, and agricultural chemicals may be potential killers. To insure proper handling of these products, the A.M.A.'s Committee on Toxicology and Committee on Pesticides will sponsor a symposium on health hazards of chemicals in Atlanta on December 29 during the annual meeting of the American Association for the Advancement of Science. Representatives of the Food and Drug Administration, U. S. Public Health Service, Preventable Diseases Service of the Georgia Department of Health, and the A.M.A. Committee on Cosmetics, as well as many physicians, will be in attendance.

Joint Blood Council

The Joint Blood Council has announced establishment of its national headquarters in Washington and the election of Dr. Frank E. Wilson of Washington as its executive vice president and secretary. As executive vice president of the new nonprofit organization, Dr. Wilson will carry out policies determined by the Board of Directors.

WHY SENSITIZE

in topical and ophthalmic infections

USE 'POLYSPORIN'®

brand

POLYMYXIN B—BACITRACIN OINTMENT

to insure broad-spectrum therapy with minimum allergenicity

For topical use: in ½ oz. and 1 oz. tubes.
For ophthalmic use: in ⅛ oz. tubes.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.

The Joint Blood Council is a completely voluntary group, formed by the five national associations principally concerned with procuring, processing, preserving, and distributing blood and blood derivatives. Its objective is to coordinate all activities in this field, including the interchange of blood, the standardization of cross-matching and typing procedures, the accreditation and inspection of blood banks, the stimulation of blood donor campaigns and the encouragement of research. In time of emergency, the council will be prepared to assist in setting up new blood banks and to handle requests of the military forces for blood and blood derivatives.

Joined in the new venture are the American Association of Blood Banks, the American National Red Cross, the American Medical Association, the American Hospital Association and the American Society of Clinical Pathologists, which have equal representation on the council's board of directors.

Dr. Leonard W. Larson of Bismarck, N. D., is president of the Council, Dr. Merlin L. Trumbull of Memphis vice president, and Dr. Karl S. Klicka of Chicago treasurer. In addition to these three officers, the directors are: Drs. David N. W. Grant of Washington, James J. Griffitts of Miami, Donald H. Kaump of Detroit, Frank W. Konzelmann of Washington, Edwin L. Crosby of Chicago, Walter B. Martin of Norfolk, and Mr. Charles H. Kellstadt of Atlanta.

Dr. Wilson has been with the American Medical Association's Washington Office for seven years, and its director for the last three years. He has had previous experience developing blood bank programs and was the first secretary of A.M.A.'s Committee on Blood.

United Cerebral Palsy

Leonard W. Mayo, Ph.D. of Westport, Connecticut, director of the Association for the Aid of Crippled Children, addressed the United Cerebral Palsy Annual Convention, held at Boston's Hotel Statler on November 11, 12 and 13.

Mr. Mayo's topic was "The Future of Specialized Health Agencies in the United States." He was introduced by Dr. H. Houston Merritt, of Bronxville, New York, director of the Service of Neurology at the Neurological Institute, Columbia-Presbyterian Medical Center, and chairman of the Medical-Professional Executive Board of United Cerebral Palsy.

Dr. Merritt, who presided at the luncheon session, is a vice president of United Cerebral Palsy. He was recently elected to the Executive Committee of the newly-organized Research and Educational Foundation. The Foundation, established by United Cerebral Palsy and a group of interested industrialists, plans to accelerate the research attack on the complex problem of cerebral palsy.

Mississippi Valley Medical Society

The attention of physician medical writers is called to the Mississippi Valley Medical Society Annual Essay Contest. Any subject of general medical or surgical interest including medical economics and education may be submitted, providing the paper is unpublished and is of interest and applicable value to general practitioners of medicine.

Contributions are accepted only from physicians who are members of the American Medical Association and who are residents and citizens of the United States. Manuscripts must not exceed 5000 words and be submitted in five complete copies, in manuscript style. The winning essay receives a cash prize of $100.00, gold medal, and a certificate, also an invitation to address the annual meeting of the Mississippi Valley Medical Society, which is held at the same time and place as the annual meeting of the American Medical Writers' Association. (1956 meeting, Hotel Morrison, Chicago, September 26, 27, 28.) The Society may also award certificates of merit to physicians whose essays rate second and third best.

Essays must be in the office of the Secretary of the M.V.M.S. not later than May 1, 1956. Winning essays are published each year in the January number of the *Mississippi Valley Medical Journal* (Quincy, Illinois). Further details may be secured from the Mississippi Valley Medical Society, Harold Swanberg, B.S., M.D., F.A.C.P., Secretary, 209-224 W. C. U. Building, Quincy, Illinois.

* * *

The November issue of the *Mississippi Valley Medical Journal & Radiologic Review* (Quincy, Illinois) is the eighth annual radiation therapy number of the publication. It contains 16 original articles, especially written for this number, which should appeal to non-radiologists and help acquaint them with some of the accomplishments of radiation therapy.

The January issue of the *Mississippi Valley Medical Journal* will contain the papers presented at the recent St. Louis meeting of the American Medical Writers' Association and the winning essays of the 1955 Mississippi Valley Medical Society annual essay contest.

Association of Life Insurance Medical Directors

Dr. Ralph R. Simmons, medical director of the Equitable Life Insurance Company of Iowa, Des Moines, has been elected president of the Association of Life Insurance Medical Directors of America at its sixty-fourth annual meeting at the Hotel Statler.

Dr. Simmons will succeed Dr. Richard L. Willis, chief medical director of the Mutual Life Insurance Company of New York, whose term of office ends at the conclusion of the annual meeting.

More than 250 physicians representing life insurance companies in the United States, Canada and South America attended the meeting.

National Vitamin Foundation

Appropriations for grants-in-aid of research by the National Vitamin Foundation during 1954 amounted to $151,333.33 and for educational purposes $21,330.99, a total of $172,664.32, the report said.

The National Vitamin Foundation, Inc., was organized in 1946 by producers and distributors of vitamins and related products to promote and support studies of nutrition in both health and disease, particularly as they relate to vitamins, and to initiate and encourage research in any way relating to medicine and health.

"During the past nine years the Foundation has been a major contributor to the advancement of the science of nutrition," Dr. Goodhart said. "The total of the implemented and payable appropriations in the areas of research and education made by the Foundation since its incorporation amounted to $1,034,466.87.

AMERICAN MEDICAL WRITERS' ASSOCIATION

At the twelfth annual meeting of the American Medical Writers' Association held at St. Louis last September, the following officers were elected for 1956: President-Elect, Dean F. Smiley, M.D., Chicago, Editor, Journal of Medical Education; First Vice President, Russell L. Cecil, M.D., New York, emeritus professor of medicine, Cornell University; Second Vice President, Austin Smith, M.D., Chicago, Editor of the J.A.M.A.; Editor, Charles E. Lyght, M.D., Rahway, New Jersey, associate medical director, Merck & Co., Inc., (re-elected);

Accounting Officer, Kenneth H. Schnepp, M.D., Springfield, Illinois, Former Editor, Bulletin, Sangamon County Medical Society (Ill.); Secretary-Treasurer, Harold Swanberg, M.D., Quincy, Illinois, Editor, *Mississippi Valley Medical Journal & Radiologic Review* (re-elected).

The Association has had a very successful year, is in good financial condition, and its rapid growth continues, (more than 800 members). The 1956, Thirteenth Annual Meeting, including a Workshop on Medical Writing, will be held at the Hotel Morrison, Chicago, September 28-29, during the twenty-first annual meeting of the Mississippi Valley Medical Society at the same hotel.

PAN AMERICAN SANITARY BUREAU

Medical care in rural areas and the education of public health personnel were this year's subjects for the technical discussions held during the eighth meeting of the Pan American Sanitary Organization's Directing Council, which sits also as the Regional Committee of the World Health Organization. Such discussions have taken place at annual P.A.S.O. meetings since 1951, following the pattern established by the World Health Assembly in 1949. These gatherings of health professionals from many countries afford an unusual opportunity for an exchange of views on subjects normally outside the scope of the regular agenda.

* * *

Dr. Paulo A. C. Antunes, former Secretary of Public Health of the Brazilian State of Sao Paulo and a leading authority in public health, has spent a week at the Pan American Sanitary Bureau, Regional Office of the World Health Organization, in consultation with the Bureau Director, Dr. Fred L. Soper, on the program for continent-wide eradication of malaria.

Of special interest in the discussions was the 20-million dollar eradication program launched this autumn by the Mexican Government in furtherance of the Bureau's intensive drive to wipe out malaria from the Hemisphere within the next few years, before the insect that spreads the disease, the Anopheles mosquito has time to develop such resistance to DDT as to make the task much more difficult and costly.

DEPARTMENT OF THE ARMY

Major General James O. Gillespie, Chief of the Professional Division in the Office of The Surgeon General, received the second stars of his new rank in a ceremony held in the Office of The Surgeon General, Thursday, October 20. He is responsible for professional activities of the Army Medical Corps including medical, surgical, psychiatry and neurology, physical standards, physical medicine, and pathology and allied sciences.

ATOMIC ENERGY COMMISSION

Dr. Charles L. Dunham has been appointed director of the Atomic Energy Commission's Division of Biology and Medicine, effective October 1. Dr. Dunham succeeds Dr. John C. Bugher, director of the Division since July 1, 1952. Dr. Bugher will return to the Rockefeller Foundation, which recently announced his appointment as director of Medical Education and Public Health.

Dr. Dunham has been Deputy Director of the Division of Biology and Medicine since July, 1954. He was Chief of the Medical Branch of the Division from August, 1949, until his appointment as Deputy Director.

* * *

Thirteen leading doctors and surgeons from 12 countries have begun a five-week tour of atomic medical facilities in the United States.

This is the second medical group to make a visit of this kind and the project, part of President Eisenhower's atoms-for-peace program, is sponsored by the U. S. Atomic Energy Commission and the U. S. Department of State. The American Council of Education will be in charge of arrangements for the group. A similar tour in June and July of this year included 23 medical men from 12 nations.

VETERANS ADMINISTRATION

More than 500 successful non-human heart surgery operations have been performed with the aid of a simple pump developed at the Veterans Administration hospital in Nashville, Tennessee, with the result that its use on humans now is considered imminent.

Dr. Frank Gollen of the Nashville staff who, with associates developed the pump described as "no bigger than a Tennessee Jigger," offered the scientifically-cautious admission that it may be used for human surgery in the near future.

* * *

Severely disabled Korea veterans are entering vocational rehabilitation training at a much greater rate than veterans with lesser disabilities, a Veterans Administration study disclosed today. VA said the reason appears to be that the severely handicapped are not content with sitting on the sidelines. They, most of all, need the help of rehabilitation in making a comback to productive living—and they have done something about getting it.

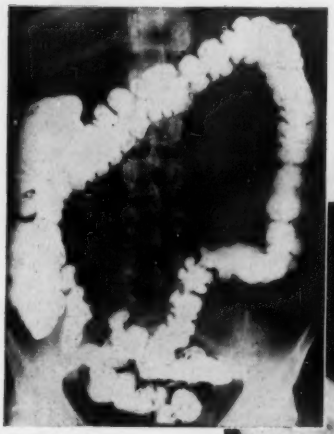
According to the VA study, one out of every five Korea veterans with disabilities rated at 60 per cent or more have enrolled for training thus far.

Forty per cent of the trainees have orthopedic disabilities; 20 per cent have had nervous or mental conditions; 10 per cent have had respiratory ailments; 7 per cent, heart conditions, and the remainder a wide variety of other disabilities.

Classified Advertisement

NORTH CAROLINA—Outstanding opportunity General Practice — Gross $30,000 or better. Balanced agriculture and industry. Large drawing area. Two medical school centers and three well known universities within 50 minutes driving time. Less than 5 hours drive from Blue Ridge Mountains and 3 hours seashore. Leavind to specialize. Will introduce. Office equipment optional. Contact immediately. Dr. W. A. Dunnagan, Clayton, North Carolina.

METAMUCIL® IN CONSTIPATION



Normal Colon

Uleerative Colitis

Atonic Colon

Smoothage in Correction of Colon Stasis

To initiate the normal defecation reflex, the "smoothage" and bulk of Metamucil provide the needed gentle rectal distention.

Once the habit of constipation has been established, due to any of a large number of causes, it becomes a major problem. Self-medication with irritant or chemical laxatives, or repeated enemas, usually causes a decreased, sluggish defecation reflex and may result in its complete loss.

Rectal distention is a vital factor in initiating the normal defecation reflex, and sufficient bulk is thus of obvious importance in restoring this reflex. Metamucil provides this bulk in the form of a smooth, nonirritating, soft, hydrophilic colloid which gently distends the rectum and initiates the desire to evacuate. Metamucil demands extra fluid, imparting even greater smoothage to the intestinal contents.

It is indicated in chronic constipation of various types—including distal colon stasis of the "irritable colon" syndrome, the atonic colon following abdominal operations, repressions of defecation after anorectal surgery and in special conditions such as the management of a permanent ileostomy. Metamucil is the highly refined mucilloid of Plantago ovata (50%), a seed of the psyllium group, combined with dextrose (50%) as a dispersing agent.

The average adult dose is one rounded teaspoonful of Metamucil powder in a glass of cool water, milk or fruit juice, followed by an additional glass of fluid if indicated.

Metamucil is supplied in containers of 4, 8 and 16 ounces. G. D. Searle & Co., Research in the Service of Medicine.

SEARLE

KER'S
IED MILK
Made from Grade A cow's milk (U.S. Public Health Service Milk Code) in which the milk fat has been replaced by coconut oil, destearinated beef fat, and corn oil; with the addition of lactose, dextrins, maltose, dextrose, vitamin A palmitate, activated 7-dehydrocholesterol, ascorbic acid, thiamine, niacinamide, and iron ammonium citrate.
13 FLUID OZ
Bottle fed Baby
LABORATORIES, INC.
CLEVELAND 3, OHIO
TROY, WISCONSIN
Made from Grade A Cow's Milk
Made from Grade A cow's milk (U.S. Public Health Service Milk Code) in which the milk fat has been replaced by coconut oil, destearinated beef fat, and corn oil; with the addition of lactose, dextrins, maltose, dextrose, vitamin A palmitate, activated 7-dehydrocholesterol, ascorbic acid, thiamine, niacinamide, and iron ammonium citrate.

BAKER'S
MODIFIED MILK

made from grade A milk*

"The first in infant feeding"

This statement is your assurance of the use of high quality, clean milk. Make a habit of looking for it on the label of the milk products which you prescribe for infant feeding.

The quality of the ingredients is reflected in the quality of the final product!

FEEDING DIRECTIONS		
	Baker's	Boiled Water
First 5 days of life	1 part	2 parts
Second 5 days	1 part	1½ parts
After 10th day	1 part	1 part

*U. S. Public Health Service Milk Code

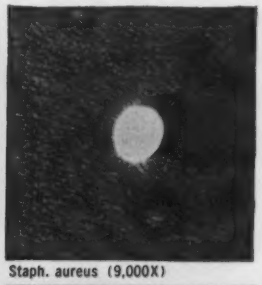
THE BAKER LABORATORIES, INC.

Milk Products Exclusively for the Medical Profession

MAIN OFFICE: CLEVELAND 3, OHIO PLANT: EAST TROY, WISCONSIN

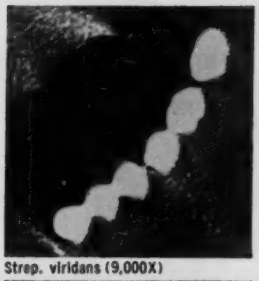
The organisms commonly involved in

Bronchiectasis



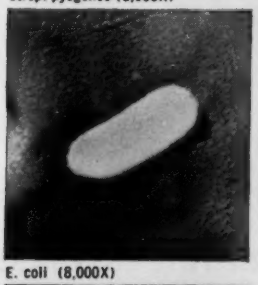
Staph. aureus (9,000X)

Strep. pyogenes (8,500X)

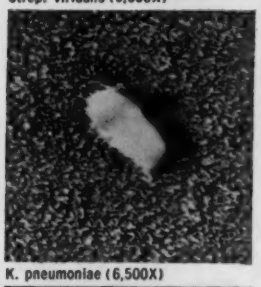


Strep. viridans (9,000X)

Strep. faecalis (10,000X)



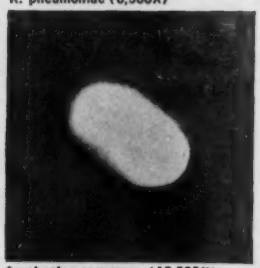
E. coli (8,000X)



K. pneumoniae (6,500X)

D. pneumoniae (10,000X)

H. influenzae (16,000X)



Aerobacter aerogenes (12,500X)

Upjohn

ELECTRON MICROGRAPHS

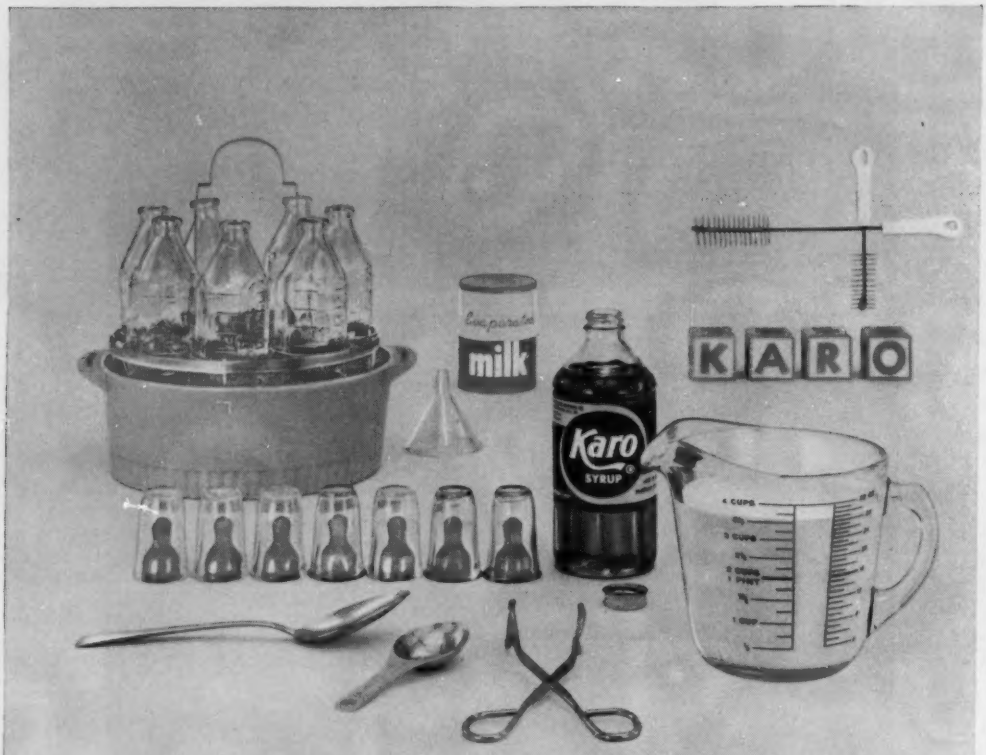
***All* of them are included in the more than 30 organisms susceptible to broad-spectrum**

PANMYCIN*

HYDROCHLORIDE

100 mg. and 250 mg. capsules • 125 mg. and 250 mg./tsp. oral suspension (PANMYCIN Readimixed)
100 mg./cc. drops • 100 mg./2 cc. injection, intramuscular
100 mg., 250 mg., and 500 mg. vials, intravenous

*TRADEMARK, REG. U. S. PAT. OFF.—THE UPJOHN BRAND OF TETRACYCLINE



KARO SYRUP **BELONGS IN THIS PICTURE!**

...a carbohydrate of choice
in milk modification for 3 generations

OPTIMUM caloric balance—60% of caloric intake, gradually achieved in easily assimilable carbohydrates —is assured with Karo. Milk alone provides 28%, or less than half the required carbohydrate intake.

A MISCIBLE liquid, Karo is quickly dissolved, easy to use, readily available and inexpensive.

A BALANCED mixture of dextrins, maltose and dextrose, Karo is well tolerated, easily digested, gradually absorbed at spaced intervals and completely utilized.

PRECLUDES fermentation and irritation. Produces no reactions, hypoallergenic. Bacteria-free Karo is safe for feeding prematures, newborns, and infants—well and sick.

LIGHT and dark Karo are interchangeable in formulas; both yield 60 calories per tablespoon.

CORN PRODUCTS REFINING COMPANY • 17 Battery Place, New York 4, N. Y.

1950 Cortone® | 1952 Hydrocortone®
1954 'Alflorone' | 1955 Deltra®

'Hydeltra' tablets
(PREDNISOLONE, MERCK) 2.5 mg.—5 mg. (scored)

the delta, analogue of hydrocortisone

SHARP & DOHME
Philadelphia 1, Pa.
DIVISION OF MERCK & CO., INC.

Indications: *Rheumatoid arthritis*
Bronchial asthma
Inflammatory skin conditions

BRAWNER'S SANITARIUM
ESTABLISHED 1910
SMYRNA, GEORGIA
(SUBURB OF ATLANTA)

FOR THE TREATMENT OF PSYCHIATRIC ILLNESSES AND PROBLEMS OF ADDICTION

Psychotherapy, Convulsive Therapy, Recreational and Occupational Therapy

Modern Facilities

Custodial Care for a Limited Number of Elderly Patients at Monthly Rate

JAS. N. BRAWNER, M. D. — MEDICAL DIRECTOR
JAS. N. BRAWNER, JR., M. D. — ASSISTANT DIRECTOR AND SUPERINTENDENT
ALBERT F. BRAWNER, M. D. — RESIDENT SUPERINTENDENT

P.O. Box 218 Phone 5-4486

Adequate Hospitalization for Treatment of Alcoholics

Doctors find the modern facilities and specialized care available at White Cross Hospital meet a vital need.

Affords Sympathetic Atmosphere, Encouraging Personal Attention, Specially Trained Staff

It is generally believed that alcoholism is self-imposed. Often in general hospitals the alcoholic patient is not considered to be "legitimately" sick, which results in the wrong psychological and emotional atmosphere that aggravates the condition. This is why more and more doctors with alcoholic cases where hospitalization is essential are utilizing the facilities at White Cross Hospital, devoted to the treatment of alcoholics exclusively. Here a sympathetic, comfortable and pleasant atmosphere—so essential to rehabilitation—is assured. The White Cross staff, trained in the special problems of the inebriate, is adequate to assure prompt attention at all hours. The White Cross Hospital is under the direction of a competent licensed physician, with five consulting physicians subject to call. Registered nurses and technicians are in charge 24 hours daily.

Safe, Effective White Cross Treatment

A private hospital offering scientific, institutional, medical, psychological, reflex, reduction and other methods for the rehabilitation of consent patients suffering from alcoholism. With the consent of the doctor and patient, the regular White Cross procedure is followed. At your request, your patient remains entirely under your supervision. You may come and go in White Cross Hospital at will, and will find the staff completely cooperative. Your recommendations will be followed to the letter.

All equipment modern with facilities to take care of 50 patients both male and female.

Salem, Va. Hospital

Approved and licensed by the Virginia State Hospital Board, Member American Hospital Association. Located atop beautiful Mt. Regis, in the quiet serene mountains of Virginia—conducive to rest, comfort and rehabilitation.

For information phone or write for booklet
Rates Reasonable

WHITE CROSS HOSPITAL

Five miles west of Roanoke on route No. 11
Salem, Virginia—Phone Salem 4761

Copyright 1955 H.N. Alford, Atlanta, Ga.

Ménière's syndrome, cerebral arteriosclerosis, fenestration surgery, streptomycin toxicity

radiation therapy

narcotization

motion sensitivity in every form of travel

effective
control of
nausea
vomiting
vertigo

associated with labyrinthine dysfunction

BONAMINE*$_{HCl}$

Brand of meclizine hydrochloride

Two convenient dosage forms . . . tasteless TABLETS (25 mg.) and mint-flavored, universally acceptable CHEWING TABLETS (25 mg.). Bonamine is ethically promoted. *Trademark

Pfizer PFIZER LABORATORIES, *Division, Chas. Pfizer & Co., Inc.,* Brooklyn 6, N. Y.

TUCKER HOSPITAL, INC.

212 West Franklin Street
Richmond, Virginia

A private hospital accepting for diagnosis and treatment organic neurological conditions, selected psychiatric and alcoholic cases, metabolic disturbances of an endocrine nature, individuals who are having difficulty with their personality adjustments, and children with behavior problems. Patients with general medical disorders admitted for treatment under our staff of visiting physicians.

Under the Professional Charge of

DR. HOWARD R. MASTERS, DR. JAMES ASA SHIELD

AND ASSOCIATES

Catalog on Application

specify

LEDERLE

POLIOMYELITIS IMMUNE GLOBULIN

(human)

Lederle

For the modification of measles and the prevention or attenuation of infectious hepatitis and poliomyelitis.

LEDERLE LABORATORIES DIVISION
AMERICAN Cyanamid COMPANY Pearl River, New York

ELIMINATE STAIR CLIMBING

with an **INCLIN-ATOR**

Goes up or down stairway. Seats two comfortably.

or

ELEVETTE

Fits into home stairwell, closet, or other small places.

Both push-button controlled. Operate on ordinary house current. Attractive. Used in hundreds of North Carolina homes. Surprisingly low in cost.

Call or write for information

MONARCH ELEVATORS

Greensboro, North Carolina

1950 Cortone® | 1952 Hydrocortone®
1954 'Afflorone' | 1955 Deltra®

'Hydeltra' tablets
(PREDNISOLONE, MERCK) 2.5 mg.—5 mg. (scored)

the delta$_1$ analogue of hydrocortisone

SHARP & DOHME
Philadelphia 1, Pa.
DIVISION OF MERCK & CO., INC.

Indications: *Rheumatoid arthritis*
Bronchial asthma
Inflammatory skin conditions

GLENWOOD PARK SANITARIUM

Founded by
W. C. ASHWORTH, M. D.
1904

GREENSBORO, North Carolina

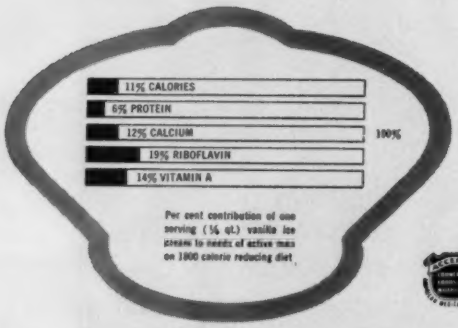
Established in 1904 and continuously operated since that date for the medical treatment of drug and alcoholic addictions. Located in an attractive suburb of Greensboro where privacy and pleasant surroundings are to be found.

WORTH WILLIAMS, *Business Manager* R. M. BUIE, JR., *Medical Director*

Address: GLENWOOD PARK SANITARIUM, Greensboro, N. C.
Telephone: 2-0614

ice cream, and

weight reduction


11% CALORIES
6% PROTEIN
12% CALCIUM
19% RIBOFLAVIN
14% VITAMIN A
100%
Per cent contribution of one serving (½ qt.) vanilla ice cream to needs of active man on 1800 calorie reducing diet

A reducing diet can have taste appeal and be effective, too.

In recent studies on weight reduction, ice cream was included with other dairy foods in meals supplying 1800 calories a day.[1] Strict adherence to such diets allowed gradual weight loss by larger women and by men whose calories did not need to be restricted excessively.

These diets contained approximately equal weights of protein, fat, and carbohydrate.[1] Fat combined with protein in a meal delays hunger—both that caused by emptiness of the stomach and by low blood sugar levels—for it reduces stomach motility and gastric juice secretion, promotes slower digestion and more gradual absorption of nutrients. Subjects on such diets maintained pep and a sense of well-being, reported no hunger pangs—but shed excess pounds.[1]

An average serving of vanilla ice cream provides only one-tenth of the calories in such a diet, but supplies one-fifth of the riboflavin need and somewhat more than one-tenth of the need for calcium and vitamin A.[2] Ice cream also supplies the high grade protein and other important nutrients found in milk.

Ice cream, a "morale booster" can go a long way to prevent the martyred feeling of the reducer.

[1]Weight Reduction Through Diet. A documentary motion picture produced in 1951. National Dairy Council.

[2]Dahlberg, A. C. and Loosli, J. K.: Nutritive value of commercial ice cream. J. Am. Diet. Assn. 24:20 (Jan.) 1948.

This seal indicates that all nutrition statements in the advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

Since 1915 . . . the National Dairy Council, a non-profit organization, has been devoted to nutrition research and education to extend the use of dairy products.

NATIONAL DAIRY COUNCIL

111 NORTH CANAL STREET • CHICAGO 6, ILLINOIS

This information is reproduced in the interest of good nutrition and health by the Dairy Council Units in North Carolina.

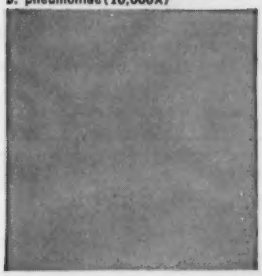
High Point-Greensboro	Winston-Salem	Durham-Burlington-Raleigh
105 Piedmont Bldg.	106 N. Cherry St.	310 Health Center Bldg.
Greensboro, N. C.	Winston-Salem, N. C.	Durham, N. C.

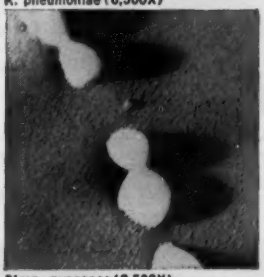
The organisms commonly involved in

Pneumonia

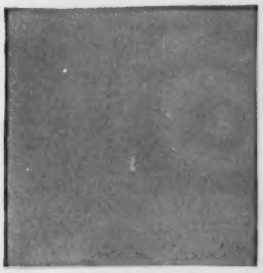
D. pneumoniae (10,000X)

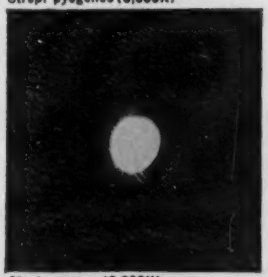
K. pneumoniae (6,500X)





Strep. pyogenes (8,500X)





Staph. aureus (9,000X)

Upjohn

ELECTRON MICROGRAPHS

***All* of them are included in the more than 30 organisms susceptible to broad-spectrum**

PANMYCIN*

HYDROCHLORIDE

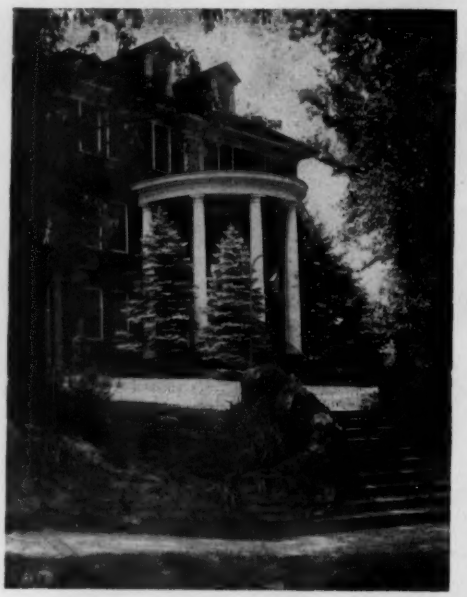
100 mg. and 250 mg. capsules • 125 mg. and 250 mg./tsp. oral suspension (PANMYCIN Readimixed) 100 mg./cc. drops • 100 mg./2 cc. injection, intramuscular 100 mg., 250 mg., and 500 mg. vials, intravenous

*TRADEMARK, REG. U. S. PAT. OFF.—THE UPJOHN BRAND OF TETRACYCLINE

HIGHLAND HOSPITAL, Inc.

FOUNDED IN 1904

ASHEVILLE NORTH CAROLINA



AFFILIATED WITH DUKE UNIVERSITY

A non-profit psychiatric institution, offering modern diagnostic and treatment procedures—Insulin, electro-shock, psychotherapy, occupational and recreational therapy—for nervous and mental disorders.

The Hospital is located in a seventy-five acre park, amid the scenic beauties of the Smoky Mountain Range of Western North Carolina, affording exceptional opportunity for physical and nervous rehabilitation.

The OUT-PATIENT CLINIC offers diagnostic services and therapeutic treatment for selected cases desiring non-resident care.

R. Charmon Carroll, M.D., Diplomate in Psychiatry
MEDICAL DIRECTOR

Robt. L. Craig, M.D., Diplomate in Neurology and Psychiatry
ASSOCIATE MEDICAL DIRECTOR

"Premarin" relieves menopausal symptoms with virtually no side effects, and imparts a highly gratifying "sense of well-being."

"Premarin" — Conjugated Estrogens (equine)

6511

1950 Cortone® | 1952 Hydrocortone®

1954 'Alflorone' | 1955 'Hydeltra'

DELTRA® tablets

(Prednisone, Merck) 5 mg. - 2.5 mg. - 1 mg. (scored)

the delta-1 analogue of cortisone

SHARP & DOHME

Philadelphia 1, Pa.
DIVISION OF MERCK & CO., INC.

Indications:

Rheumatoid arthritis

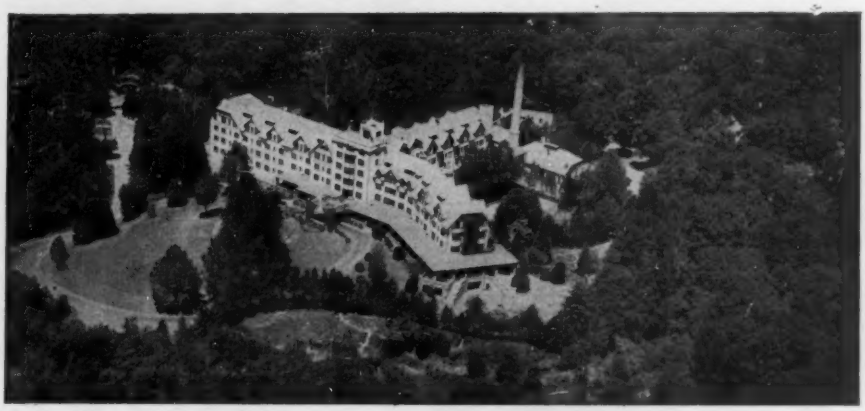
Bronchial asthma

Inflammatory skin conditions

APPALACHIAN HALL

ESTABLISHED — 1916

ASHEVILLE NORTH CAROLINA



An Institution for the diagnosis and treatment of Psychiatric and Neurological illnesses, rest, convalescence, drug and alcohol habituation.

Insulin Coma, Electroshock and Psychotherapy are employed. The Institution is equipped with complete laboratory facilities including electroencephalography and X-ray.

Appalachian Hall is located in Asheville, North Carolina, a resort town, which justly claims an all around climate for health and comfort. There are ample facilities for classification of patients, rooms single or en suite.

WM. RAY GRIFFIN, JR., M.D. MARK A. GRIFFIN, SR., M.D.

ROBERT A. GRIFFIN, M.D. MARK A. GRIFFIN, JR., M.D.

For rates and further information write APPALACHIAN HALL, ASHEVILLE, N. C.

Pork in the Dietary

During Pregnancy and Lactation

CERTAIN NUTRIENTS are required in greater than normal amounts during pregnancy and lactation. Pork meat, though its cost is low, supplies a remarkably high quantity of the nutrients required by the maternal organism in these periods of physiologic need.

During pregnancy the maternal organism may store 3.3 to 5.5 pounds of protein in excess of that contributed to fetal tissue.[1] Enough iron is stored to approximate the entire amount secreted in the milk during 9 months of lactation, in addition to the iron supplied to the fetus.[2]

The body of the newborn infant contains approximately 500 grams of protein, 14 grams of phosphorus, and 0.5 gram of iron.[3] It is estimated that the lactating mother, through breast milk, provides a 26 week old infant with about 12 grams of protein, 76 grams of lactose, and 1.2 mg. of iron each day.[2]

Pork meat, an excellent source of high quality protein, thiamine, niacin, and iron,[4] also supplies valuable amounts of other B vitamins, as well as phosphorus, magnesium, and potassium. The thiamine content of pork is particularly important, since there are few more valuable food sources of this vitamin.[4]

Pork and pork sausage—economical, good tasting—are valuable components of the dietary of the pregnant or lactating woman. Just how valuable, is shown in the table below.

1. Toverud, K.U.; Stearns, G., and Macy, I.G.: Maternal Nutrition and Child Health, an Interpretative Review, Washington, D.C., National Research Council, Bull. 123, 1950.

2. McLester, J.S., and Darby, W.J.: Nutrition and Diet in Health and Disease, ed. 6, Philadelphia, W.B. Saunders Company, 1952, p. 241.

3. Marrack, J.R.: Food and Planning, London, Victor Gollancz, Ltd., 1943, p. 67.

4. Wolgamot, I.H., and Fincher, L.J.: Pork Facts for Consumer Education, Washington, D.C., United States Department of Agriculture, AIB No. 109, 1954.

5. Watt, B.K., and Merrill, A.L.: Composition of Foods—Raw, Processed, Prepared, Washington, D.C., United States Department of Agriculture, Agricultural Handbook No. 8, 1950.

6. Bowes, A. deP., and Church, C.F.: Food Values of Portions Commonly Used, ed. 7, Philadelphia, Anna dePlanter Bowes, 1951.

Percentages of Recommended Daily Dietary Allowances* for Pregnant (3rd Trimester) and Lactating Women Provided by 3-Ounce Portions of Cooked Pork Meats and Pork Sausage

	Protein	Iron	Phosphorus	Thiamine	Riboflavin	Niacin	Calories
PREGNANCY (3rd trimester)							
Ham, without bone, 3 oz., cooked[5]	25.0%	17.3%	13.5%	30.0%	10.0%	26.7%	12.5%
Pork Chops, without bone, 3 oz., cooked[5]	25.0%	17.3%	13.3%	47.3%	10.0%	28.7%	10.5%
Pork Sausage, 3 oz., cooked[6]	17.3%	14.0%	9.2%	27.7%	10.1%	18.5%	14.7%
LACTATION							
Ham, without bone, 3 oz., cooked[5]	20.0%	17.3%	10.1%	30.0%	8.0%	26.7%	10.2%
Pork Chops, without bone, 3 oz., cooked[5]	20.0%	17.3%	10.0%	47.3%	8.0%	28.7%	8.6%
Pork Sausage, 3 oz., cooked[6]	13.8%	14.0%	6.9%	27.7%	8.1%	18.5%	12.0%

*Recommended Dietary Allowances, Washington, D. C., National Academy of Sciences—National Research Council, Publication 302, 1953

The nutritional statements made in this advertisement have been reviewed and found consistent with current medical opinion by the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

Main Office, Chicago... Members Throughout the United States

Whenever the diet is faulty, the appetite poor, or the loss of food is excessive

through vomiting or diarrhea—

Valentine's MEAT EXTRACT

stimulates the appetite,

increases the flow of digestive juices,

provides: supplementary amounts of vitamins, minerals and soluble proteins,

extra-dietary vitamin B_{12},

protective quantities of potassium, in a palatable and readily assimilated form.

Supplied in bottles of 2 or 6 fluidounces.

***Dosage** is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy.*

VALENTINE Company, Inc.
RICHMOND 9, VIRGINIA

WE CORDIALLY INVITE YOUR INQUIRY

for application for membership which affords protection against loss of income from accident and sickness (accidental death, too) as well as benefits for hospital expenses for you and all your eligible dependents.

SINCE 1902

ALL PREMIUMS COME FROM PHYSICIANS SURGEONS DENTISTS

ALL BENEFITS GO TO

$4,500,000 ASSETS
$22,500,000 PAID FOR BENEFITS

PHYSICIANS CASUALTY AND HEALTH ASSOCIATIONS
OMAHA 2, NEBRASKA

Digitalis

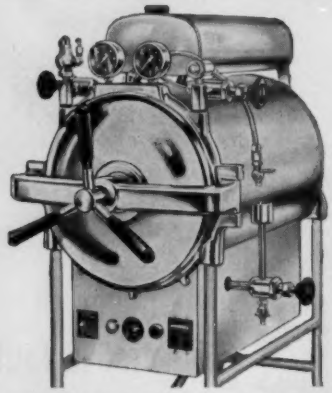
in its completeness

Each pill is
equivalent to
one USP Digitalis Unit

Physiologically Standardized
therefore always
dependable.

Clinical samples sent to physicians upon request.

Davies, Rose & Co., Ltd.
Boston, 18, Mass.



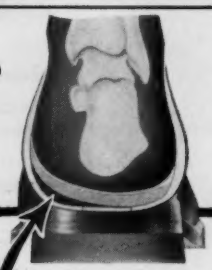
MINOR SURGERY WITH SAFETY

The Pelton LV-2 Autoclave is ideal equipment for small hospitals, clinics and offices where minor surgery is performed and as stand-by equipment in larger hospitals. Completely self-contained, generates its own steam, embraces all Pelton automatic features. Chamber, 12" x 22"; offers 2,485 cubic inches of sterilizing space; tubular stand is standard equipment. Ask for complete details.

Carolina Surgical Supply Company

RALEIGH, N. C. DURHAM, N. C.

Foot-so-Port Shoe Construction and its Relation to Weight Distribution



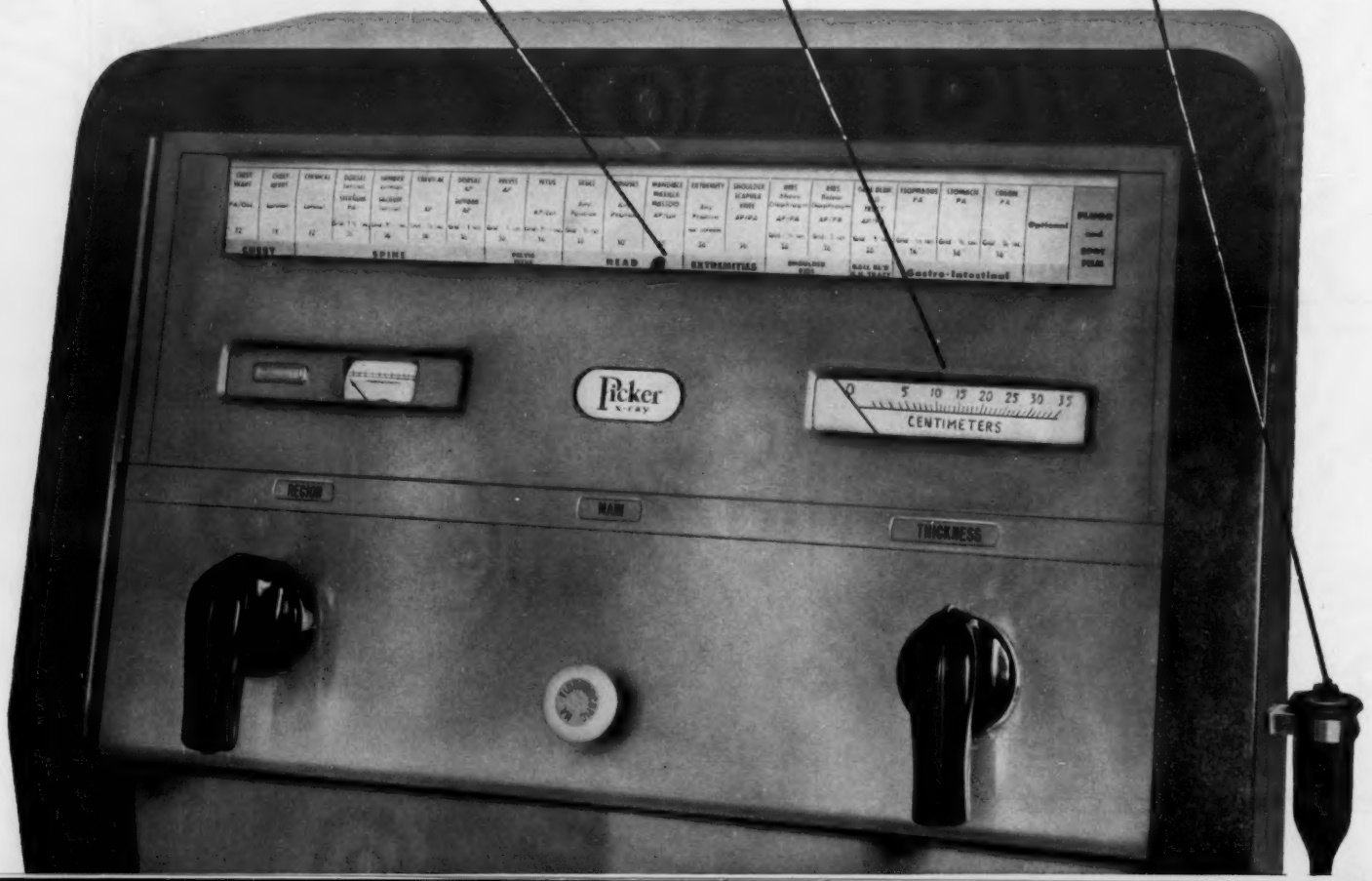
- Insole extension and wedge at inner corner of heel where support is most needed.
- Special Supreme rubber heels are longer than most anatomic heels and maintain the appearance of normal shoes.
- The patented arch support construction is guaranteed not to break down.
- Innersoles are guaranteed not to crack, curl, or collapse. Insulated by a special layer of Texon which also cushions firmly and uniformly.
- Foot-so-Port lasts were designed and the shoe construction engineered with orthopedic advice.
- **NOW AVAILABLE! Men's conductive shoes. N.B.F.U. specifications. For surgeons and operating room personnel.**
- By a special process, using plastic positive casts of feet, we make more custom shoes for polio, club feet and all types of abnormal feet than any other manufacturer.

Write for details or contact your local **FOOT-SO-PORT** *Shoe Agency. Refer to your Classified Directory*

Foot-so-Port Shoe Company, Oconomowoc, Wis.

Picker "Anatomatic" new way in x-ray

you can't help getting a "good picture every time"
when you (1) dial-the-part, (2) set the thickness, (3) take it!



Picker X-ray

get the story from your Picker representative.

CHARLOTTE 4, N. C., 1707 East Seventh Street
WINSTON-SALEM, N. C., 1016 Vernon Avenue

DURHAM, N. C., P.O. Box 995

STUART CIRCLE HOSPITAL

413-21 Stuart Circle **RICHMOND, VIRGINIA**

Medicine:
Manfred Call, III, M.D.
M. Morris Pinckney, M.D.
Alexander G. Brown, III, M.D.
John D. Call, M.D.
Wyndham B. Blanton, Jr., M.D.

Obstetrics and Gynecology:
Wm. Durwood Suggs, M.D.
Spotswood Robins, M.D.
Edwin B. Parkinson, M.D.

Orthopedics:
Beverly B. Clary, M.D.

Pediatrics:
Charles P. Mangum, M.D.
Edward G. Davis, Jr., M.D.

Ophthalmology, Otolaryngology:
W. L. Mason, M.D.

Surgery:
A. Stephens Graham, M.D.
Charles R. Robins, Jr., M.D.
Carrington Williams, M.D.
Richard A. Michaux, M.D.
Carrington Williams, Jr., M.D.

Urological Surgery:
Frank Pole, M.D.

Oral Surgery:
Guy R. Harrison, D.D.S.

Plastic Surgery:
Hunter S. Jackson, M.D.

Roentgenology and Radiology:
Fred M. Hodges, M.D.
L. O. Snead, M.D.
Hunter B. Frischkorn, Jr., M.D.
William C. Barr, M.D.

Physiotherapy:
Miss Etheleen Dalton

Anesthesiology:
William B. Moncure, M.D.
Heth Owen, Jr., M.D.

Director:
Charles C. Hough

Compliments of

Wachtel's, Inc.

SURGICAL
SUPPLIES

65 Haywood Street
ASHEVILLE, North Carolina
P. O. Box 1716 Telephone 3-7616—3-7617

Patronize

Your

Advertisers

1950 Cortone® | 1952 Hydrocortone®
1954 'Alflorone' | 1955 Deltra®

'Hydeltra' tablets
(PREDNISOLONE, MERCK) 2.5 mg.—5 mg. (scored)

the delta, analogue of hydrocortisone

SHARP & DOHME
Philadelphia 1, Pa.
DIVISION OF MERCK & CO., INC.

Indications: *Rheumatoid arthritis*
Bronchial asthma
Inflammatory skin conditions

BROADOAKS SANATORIUM

MORGANTON, NORTH CAROLINA
(ESTABLISHED IN 1901)

JAMES W. VERNON, M. D. E. H. E. TAYLOR, M. D. J. T. VERNON, M. D.

A PRIVATE HOSPITAL for the treatment of nervous and mental disorders, alcoholism and drug addiction.

A HOME FOR permanent care of selected cases of chronic nervous and mental disorders. Equipped for treatment by approved methods.

LOCATED IN PIEDMONT, N. C., the climate is mild and invigorating at all seasons.

AN OUT PATIENT DEPARTMENT is maintained for diagnostic consultation and treatment.

BETTER GET YOURS FIRST DOCTOR!

Money goes fast at Christmas time, Doctor . . . best you start getting yours now.

And one of the best ways to get your money before December spending starts, is to call the Medical-Dental Credit Bureau nearest you today. They'll clear up your overdue accounts . . . in an ethical, courteous manner . . . and keep your patients happy, too.

Yes, to beat those December charge accounts to the draw, call your Medical-Dental Credit Bureau NOW!

MEDICAL-DENTAL CREDIT BUREAUS

Greensboro—216 Commerce Pl.—Phone 3-8255 Lumberton—115 W. Second St.—Phone 3284
High Point—513 Security Bank Bldg.—Phone 3955 Raleigh—715 Odd Fellows Bldg.—Phone 3-9012
Winston-Salem—624 Nissen Bldg.—Phone 4-8373

North Carolina Members — National Association Medical - Dental Bureaus

SAINT ALBANS

A PRIVATE PSYCHIATRIC HOSPITAL
RADFORD, VIRGINIA

STAFF

James P. King, M.D., Director

James K. Morrow, M.D. Thomas E. Painter, M.D. Daniel D. Chiles, M.D.

James L. Chitwood, M.D., Medical Consultant Clara K. Dickinson, M.D.

Affiliated Clinic Offering Psychiatric and Psychological Evaluation and Therapy:

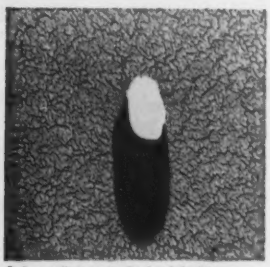
BLUEFIELD MENTAL HEALTH CENTER
1400 Bland Street
Bluefield, W. Va.
David M. Wayne, M.D., Director

The organisms commonly involved in

Pyelitis

E. coli (8,000X)

Aerobacter aerogenes (12,500X)



Salmonella paratyphi A (8,000X)

Salmonella paratyphi B (6,500X)

Strep. pyogenes (8,500X)

Strep. faecalis (10,000X)

Strep. viridans (9,000X)

Staph. aureus (9,000X)

Upjohn

ELECTRON MICROGRAPHS

***All* of them are included in the more than 30 organisms susceptible to broad-spectrum**

PANMYCIN*

HYDROCHLORIDE

100 mg. and 250 mg. capsules • 125 mg. and 250 mg./tsp. oral suspension (PANMYCIN Readimixed)
100 mg./cc. drops • 100 mg./2 cc. injection, intramuscular
100 mg., 250 mg., and 500 mg. vials, intravenous

*TRADEMARK, REG. U. S. PAT. OFF.—THE UPJOHN BRAND OF TETRACYCLINE

THE
KEELEY
INSTITUTE
447 W. Washington St.
GREENSBORO,
NORTH CAROLINA

Out-Patient Clinic
And Hospital For Rehabilitation Of
The ALCOHOLIC

A. F. Fortune, MD: Medical Director
Ben F. Fortune, MD: Associate Medical Director
R. H. Dovenmuehle, MD: Consultant in Psychiatry

In-patients are accepted in state of acute alcoholism. No waiting period required.

Registered by American Medical Association

Relax the best way
... pause for Coke

Time out for
refreshment

DRINK
Coca-Cola
REG. U.S. PAT. OFF.

The Thompson Homestead School

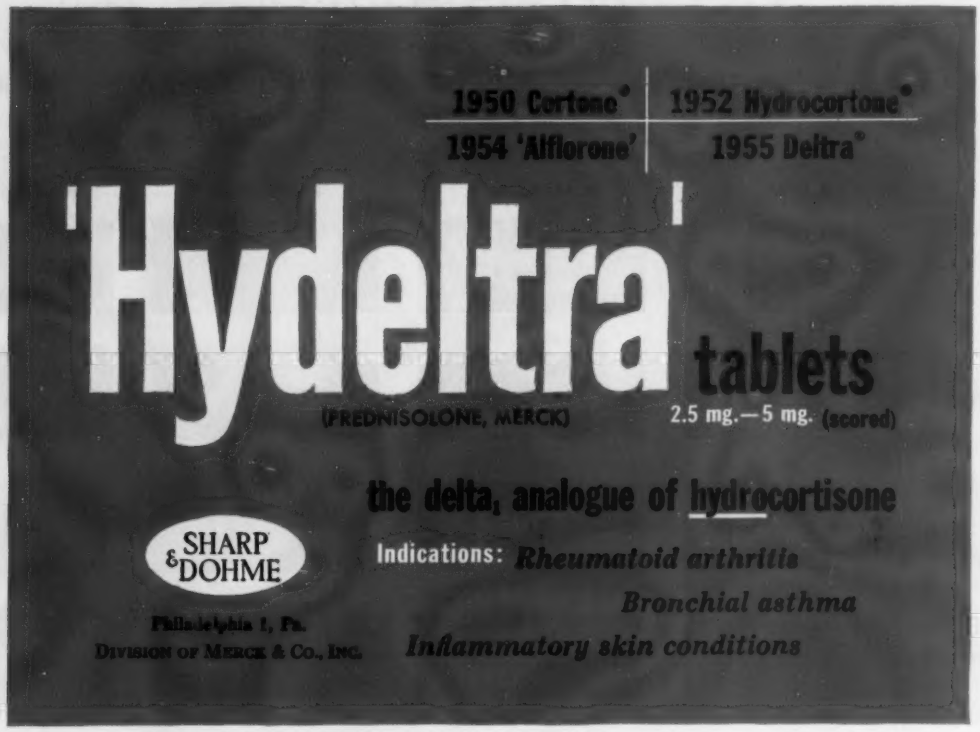
FOR EXCEPTIONAL CHILDREN

Year-round private home and school for infants, children and adults on pleasant 250 acre farm near Charlottesville.

Write for booklet.

MRS. J. BASCOM THOMPSON, *Principal*

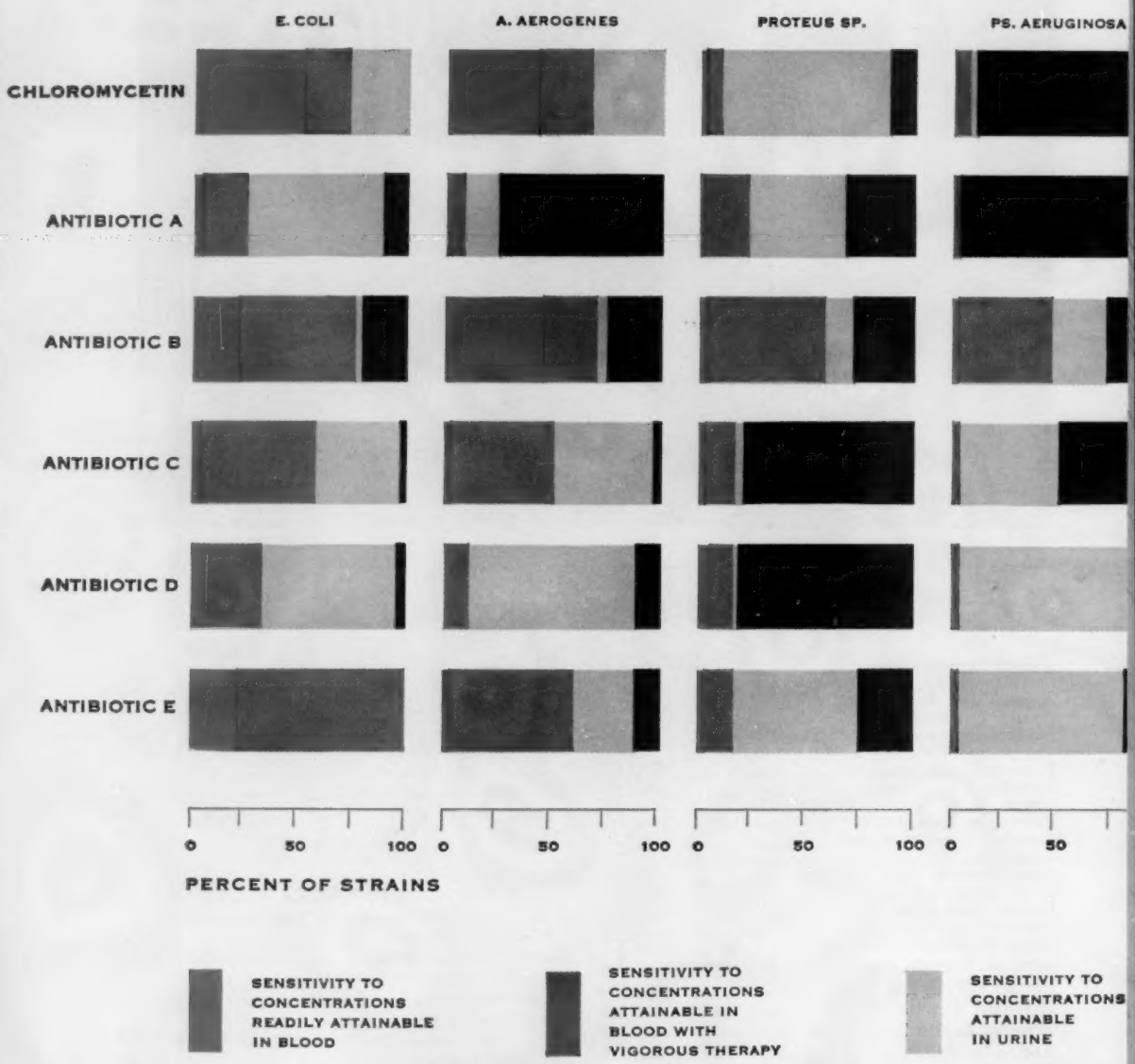
FREE UNION VIRGINIA



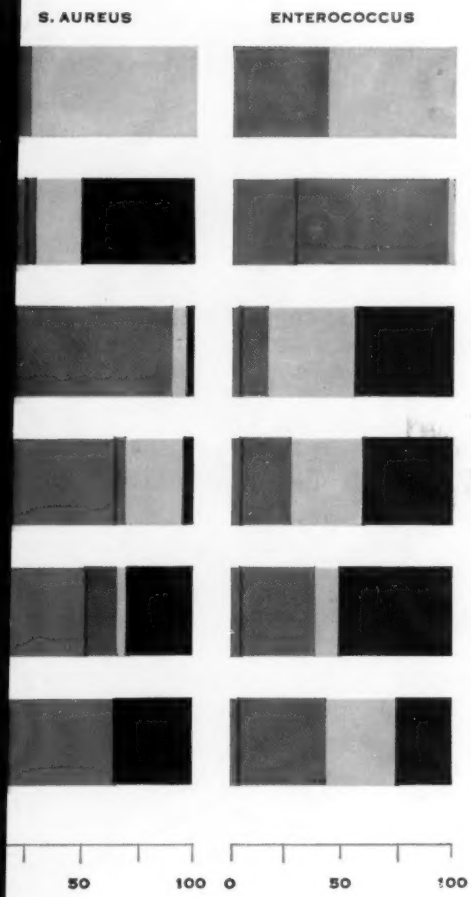
INDEX TO ADVERTISERS

Abbott Laboratories ..... XIV & XV
American Meat Institute XLII
Appalachian Hall XLI
Ayerst Laboratories XL
Baker Laboratories XXX
The Bayer Company X
Brawner's Sanitarium XXXIII
Broadoaks Sanatorium XLVII
Brown & Williamson Tobacco Co. IV
Burroughs-Wellcome & Co. ..... Reading
Carolina Surgical Supply Co. XLIV
Coca-Cola Company L
Corn Products Sales Company XXXII
J. L. Crumpton XXVIII
Davies, Rose & Co. XLIV
Foot-So-Port Shoe Co. XLIV
Geigy Pharmaceuticals, Inc. XX
General Electric Company, X-Ray Dept. XII
Glenwood Park Sanitarium XXXVII
Highland Hospital XL
Hospital Saving Assn. of N. C. XXV
Keeley Institute L
Charles B. Knox Gelatine Co. XIX
Lakeside Laboratories ..... 2nd Cover
Lederle Laboratories ..... XXVI, XXVII & XXXVI
Eli Lilly & Company ..... XXIV & Front Cover
Mead Johnson & Co. ..... 4th Cover
Medical Dental Credit Bureau XLVIII
Monarch Elevator & Machine Company XXXVI
National Dairy Council of N. C. XXXVIII
Parke, Davis & Co. ..... LII & 3rd Cover
Chas. Pfizer & Co., Inc. ..... IX & XXXV
Physicians Casualty Association
Physicians Health Association XLIII
Picker X-Ray Corporation XLV
Pinebluff Sanitarium I
Saint Albans Sanatorium XLVIII
Schering Corporation ..... VI, VII, XXII & XXIII
Sealy of the Carolinas XXXVI
G. D. Searle & Co. XXIX
Sharpe & Dohme, Inc.
V, XVII, XXXIII, XXXVII, XLI, XLVII & LI
E. R. Squibb & Sons, Div. of Mathieson
Chemical Corporation XVI
Stuart Circle Hospital XLVI
Thompson Homestead School L
Tucker Hospital XXXVI
Upjohn Company
III, XI, XXI, XXXI, XXXIX & XLIX
Valentine Company XLIII
Wachtel's, Incorporated XLVI
Westbrook Sanatorium XVII
White Cross Hospital XXXIV
Winchester Surgical Supply Co.
Winchester-Ritch Surgical Co. I
Winthrop-Stearns, Inc. XVIII
Wyeth, Inc. XIII

Resistance of Common Urinary Tract Pathogens to CHLOROMYCETIN and Other Major Antibiotics*



less resistance encountered...



Adapted from Kass, E. H.

Chloromycetin®

for today's problem pathogens

Recent in vitro tests and clinical studies again demonstrate the unsurpassed efficacy of CHLOROMYCETIN (chloramphenicol, Parke-Davis) against a wide variety of pathogens. For example, against urinary infections, now characterized by increased incidence of resistant gram-positive and gram-negative strains, CHLOROMYCETIN continues to provide outstanding antibacterial action.[1-11]

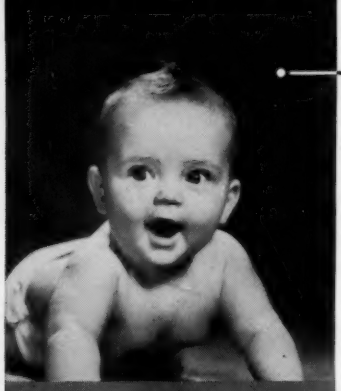
CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

References (1) Altemeier, W. A.; Culbertson, W. R.; Sherman, R.; Cole, W.; Elstun, W., & Fultz, C. T.: *J.A.M.A.* **157**:305, 1955. (2) Kutscher, A. H.; Seguin, L.; Lewis, S.; Piro, J. D.; Zegarelli, E. V.; Rankow, R., & Segall, R.: *Antibiotics & Chemother.* **4**:1023, 1954. (3) Clapper, W. E.; Wood, D. C., & Burdette, R. I.: *Antibiotics & Chemother.* **4**:978, 1954. (4) Sanford, J. P.; Favour, C. B.; Harrison, J. H., & Mao, F. H.: *New England J. Med.* **251**:810, 1954. (5) Balch, H. H.: *Mil. Surgeon* **115**:419, 1954. (6) Sanford, J. P.; Favour, C. B., & Mao, F. H.: *J. Lab. & Clin. Med.* **45**:540, 1955. (7) Felshin, G.: *J. Am. M. Women's A.* **10**:51, 1955. (8) Jones, C. P.; Carter, B.; Thomas, W. L., & Creadick, R. N.: *Obst. & Gynec.* **5**:365, 1955. (9) Kass, E. H.: *Am. J. Med.* **18**:764, 1955. (10) Stein, M. H., & Gechman, E.: *New England J. Med.* **252**:906, 1955. (11) Yow, E. M.: *Postgrad. Med.* **17**:413, 1955.

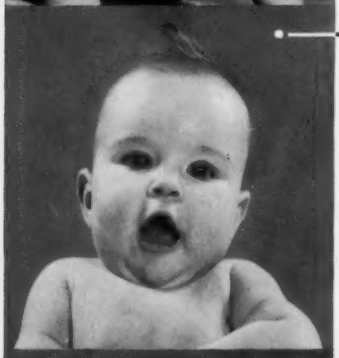
MEDICAMENTA VERA

PARKE, DAVIS & COMPANY DETROIT, MICHIGAN

Why so many physicians SPECIFY PABLUM CEREALS

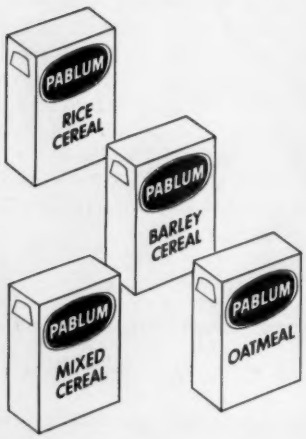


TOMMY started on Pablum Rice Cereal at the age of 2 months. He likes its smooth texture (all Pablum Cereals are smooth). Pablum Cereals give him plenty of iron—½ oz. supplies 4.2 mg.—to help prevent iron deficiency anemia.



MARY LOU likes Pablum Oatmeal. Since she has been eating Pablum Cereals her growing appetite is satisfied longer.

Pablum Rice Cereal
Pablum Barley Cereal
Pablum Oatmeal
Pablum Mixed Cereal



BARBARA—like other children—enjoys *all* four Pablum® Cereals. Each variety tempts her awakening taste buds. Pablum Cereals are scientifically packaged to insure freshness. The 'Handi-Pour' spout is an extra convenience for busy mothers.

Pablum Products

DIVISION OF MEAD JOHNSON & COMPANY
EVANSVILLE, INDIANA, U.S.A.